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AMAZING STORIES

Science Fiction

Vol. 8

May, 1933

No. 2

JULES VERNE'S TOMBSTONE AT AMIENS
PORTRAYING HIS IMMORTALITY

In Our June Issue

TUMITHAK IN SHAWM, by Charles R. Tanner. Our readers will be glad to be presented with a sequel to so favorite a story as "Tumithak of the Corridors." This narration tells of Tumithak's success in his campaign upon the surface world. In the first Tumithak story, we read of the individual work of our hero. In the sequel, we see him as a commander of an attacking force—a new rôle for him—the results of which are told in the story.

THE INTELLIGENCE GIGANTIC, by John Russell Fearn. In this most interesting story we read about the world of mentality and human intelligence as affected and developed by scientific process with the ultra-violet ray. We are told about the work attained by the use, or rather application, of the ultra-violet ray, and the first instalment of the story brings us to a most impressive part. It is interesting to note that the author is an Englishman and we welcome him on his first appearance in our columns.

THE CRIME CRUSHER, by Bob Olsen. We give another of the science fiction stories by Mr. Olsen, with its blend of science and acute intelligence in the hero, bringing into the scene a wonderful investigator who contends with the powers that be in their efforts to save themselves at his expense. What he does and how he succeeds in his work, our readers will have to find out for themselves.

And Other Unusual Science Fiction

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Published Monthly by Teck Publications, Inc., Washington and South Avenues, Dunellen, N. J.

EDITORIAL AND EXECUTIVE OFFICES

222 WEST 39th STREET, NEW YORK CITY, N. Y.

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AMAZING STORIES

THE
MAGAZINE
OF
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VOLUME
8

MAY, 1933
No. 2

T. O'CONOR SLOANE, Ph.D., *Editor*

Editorial and General Offices: 222 West 39th Street, New York, N. Y.

Extravagant Fiction Today Cold Fact Tomorrow

Aluminium

By T. O'Conor Sloane, Ph.D.

THE metal aluminium, which has the better termination, although the word aluminum is very common, ranks as the third commonest element on the surface of the earth. Any number of rocks contain it with various other constituents. It forms the basis of clay, so that every one of our dinner plates or tea cups represents the compound of this metal with oxygen and sometimes with another element or elements in small proportion. The commonest pottery, such as a flower pot, is based upon the use of clay, which is the use of aluminium oxide. It is here that we meet with one of the curious variations in chemistry. Nothing can seem cheaper than a flower pot, but the identical aluminium oxide, crystallized and colored, it may be by chromium or some other element, gives us the ruby, the oriental emerald, the sapphire and other jewels, the ruby being practically at the head of the list in value.

It is a strange transition from a flower pot to a ruby; the latter weight for weight often exceeds the value of a diamond of corresponding size.

The color of the perfect ruby is expressed by the words "pigeon's blood." Artificial rubies are made by a fusion process and are colored by a very little chromic acid. Artificial sapphires made in the same way are colored by a trace of titanic oxide.

The Romans and other nations at the beginning of the Christian era collected salts from the surface of the ground in the volcanic regions, and among them aluminium sulphate. This gave them a mordant of great power for fixing the famous purple of Tyre upon the fabrics which they wove.

The women of antiquity were kept busy weaving fabrics. It is a strange thought that when man wanted to make a cover for his body, he started with thin threads and to effect the dying of the fabrics aluminium and iron salts came into play, and in this way the world drifted along for centuries. When beautiful rubies were brought from Burmah it never occurred to the monarchs, whose crowns were adorned with such jewels, that the composition of these beautiful rubies differed very little from the material of the commonest earthenware.

IT was not until the eighteenth century that chemists awoke to the idea that what we call chemical compounds were additive. They had formulated the absurd theory before this period, that when a metal was oxidized, and of course gave an oxide weighing more than the original, a mysterious thing called phlogiston had been removed from it, thereby increasing its weight so that actually this theory, which was upheld for some time in all its absurdity, reminds us of the stories of negative gravity, which have been written by such writers as H. G. Wells.

Lavoisier, the great French chemist discarding the absurd idea of phlogiston following along with the Englishman, Priestley, who had come to America, developed the additive theory of chemistry. Thus alumina or clay or rubies are formed by the addition of oxygen to the metal aluminium.

It was in the early days of the nineteenth century that the great English chemist, Sir Humphrey Davy, was using the primary electric battery to attack and

decompose oxides. At one of the poles of his battery he had a globe of mercury, having a very correct idea that this would amalgamate as we now call it, so that an amalgam or "alloy" of mercury and of the metal would be produced by the current, and the mercury would act as a sort of collector of metal. It was by processes such as this that Davy produced sodium and potassium, but he could not produce unalloyed aluminium. That metal evaded him, but he did get alloys of it, or at least an alloy. Sir Humphrey Davy's work in those days, excited the greatest public interest, comparable to that which the theorizing of Einstein and the work of such men as Millikan and Compton and of the investigators of the General Electric Company in Schenectady occasion now. For his operations he needed a powerful electric battery, and the primary batteries of those days were the only source they had for generating electric power of any considerable amount. A great number of jars were required for real power, and it was a long and tedious affair to set them up and fill them with solutions. From the moment the solution entered them, the zinc plates began to deteriorate, the copper or other negative plate would begin to polarize, as it is called, so that to get anything like power, even as much as every automobile uses in its starting, a very large battery would be required, and to get the good out of it there should not have been the least delay in starting work with it, because of this automatic and rapid deterioration in power.

To express appreciation for the work done by Sir Humphrey Davy with the battery, which included the production of the electric arc, we are told that the present of a great battery was made to Davy. But he had not yet obtained pure aluminium.

THIS was produced some ten years after his time—first as a gray powder and then as little pellets. The French chemist, Sainte-Claire Deville, followed up the work of preceding investigators and by using sodium as the reducing agent, where the far more expensive potassium formerly had been employed, approached what might be called, a manufacturing process. Deville's experiments led to the establishment of a metallurgical plant in France under the auspices of Napoleon the Third, who was then Emperor.

The metal was exhibited at the different World's Fairs and used to be called the "silver of clay." It was quite the thing to give a piece of aluminium to someone to hold, so that they would realize its lightness, about a third that of iron, and great astonishment was excited by this feature. When first exhibited at a World's Fair in 1855, it was very expensive. A pound of it was worth \$90.00. This is not far from one-quarter the price of gold at the present day. Fifteen years later it had got down to \$12.00 a pound and kept going down. In 1889 it was \$2.00 a pound, in 1904 33c a pound and in 1911 the average price was 22c a pound. Clay gave up its "silver" at quite a low price.

Aluminium has increased enormously in the amount produced. In 1886 only one and one-half tons were

reduced. Five years later the production was seventy-five tons and now it bids fair to attain the production of one hundred thousand tons.

Its lightness and strength suggest naturally its use for dirigibles or lighter than air ships. Its alloys have most interesting properties. In the Duren district, Germany, an alloy of the metal with copper, manganese and magnesium was produced which had such good qualities, that it is replacing other aluminium alloys, especially for the frames of dirigibles. The name duralumin is familiar to everybody, it is so frequently spoken of in the daily press. It is fair to say that very little unalloyed aluminium is used in a practical way; it is almost always alloyed with some other metal.

In reference to the modern kitchen, if we ask what are the great changes in the utensils of the chef, it would appear that they are pyrex, the glass which stands heat so well, and aluminium. The old time iron kettles were heavy and the tin kettles rusted. The aluminium ones which are substituted for them, are very light.

SOME of the more or less old-fashioned housewives were very proud of their copper pans and kettles. If these were neglected they would corrode and there would be danger of poisoning the food prepared in them, something which aluminium, except in exorbitant quantities of its compounds, will not do.

Following in the steps of Sir Humphrey Davy, and we strongly suspect in the steps of Faraday, most aluminium is now produced by electric power, by the electrolysis of one of its compounds called bauxite. This is dissolved or melted up with another compound of aluminium, sodium and fluorine, called cryolite. When a current of electricity is passed through the melted mixture, the aluminium very obligingly separates out from the bauxite, the cryolite being only slightly affected; although it contains aluminium it is but little decomposed, almost all the aluminum coming from the bauxite. There are great quantities of cryolite in Greenland and it used to be shipped from there by the cargo, but now it is produced artificially on the manufacturing scale.

If we go right down the line, aluminium will impress us as a very wonderful substance. It does all sorts of things according to the temperature and other conditions. The metal, when it approaches its temperature of fusion, is very brittle and can be easily reduced to powder. This powder mixed with a varnish-like vehicle constitutes aluminium bronze paint. It can also be beaten out until it is almost as thin as gold leaf.

And now we come to a mechanical operation based on its affinity for oxygen.

If powdered aluminium is mixed intimately with chromium oxide, manganese oxide or iron oxide, the application of high heat to any portion of it, which may be very minute, will start a violent combustion of the aluminium and a reduction of the other metal, which reaction will automatically go through the mass, producing a very high temperature. It has been estimated

that it will go as high as 5,000 degrees F. The oxide of chromium or of manganese or of iron as the case may be, is reduced to the metal, the aluminum taking up the oxygen and floating on top as a slag. This slag has the composition of the ruby or sapphire, but it certainly doesn't look a bit like either. It floats upon the surface of the melted metal, chromium, manganese or iron, which is as liquid as water owing to the heat. The metal may be cast in molds; it may be poured upon iron objects which are to be welded together, and it can be used to repair broken parts of the frames of vessels, melting them together by its enormous heat where they are broken.

This is the famous thermit process. It can be done on a small scale and is so interesting and strange, that it has been used on the vaudeville stage as an exhibition. There are many deposits of magnetic oxide or iron in nature which are almost chemically pure. By applying the thermit process to this, it may be as little as a pound or two mixed with powdered aluminum in a crucible and starting the ignition, the metal oxide will be reduced and made liquid, so that it can be cast in a mold, and you can have a piece of almost chemically pure iron, so soft, because of its purity, that, as the metallurgist says, it can be cut with a knife—but if you will believe the writer, it cannot be cut to any considerable depth.

THE rapid increase in the tonnage produced indicated a rapid extension of uses for this "silver of clay." With all its interesting properties, one is impressed by the definite limitations to which it is subject. Its soldering is not very impressive; it is done with considerable difficulty and is apt to be imperfect, but two or three workmen can go out on a railroad and using the thermit reaction can weld the joints of the heavy rails into a solid mass, carrying all the required material in a wheelbarrow.

The thermit reaction has been used on icebergs with considerable success. The enormous heat produced by the process, when a good quantity is used, operates to destroy or break up the menacing berg.

The use of the metal is spreading rapidly—the year 1942 has been "ear-marked" as the beginning of the age of aluminium, when thirty billion kilowatt hours, or a third of all the power generated on earth will be electrical, and a great proportion of it will be used for producing aluminium. For most purposes it will probably be alloyed with some other metal—an eight per cent addition of copper gives a standard casting alloy.

It is said that the world's copper will be exhausted inside of fifty years—apparently aluminium will have to take its place. It is a good conductor of electricity, but it is so light that it has to be about double the diameter of copper wire of the same resistance.

And *apropos* to our subject, a most interesting lec-

ture has recently been given at the annual Winter Convention of the American Institute of Electrical Engineers. Professor Colin G. Fink, of Columbia University, was the speaker. He made a prophecy that radical changes are indicated in our basic industries and that they will come in the next ten years from the use of this metal. There is plenty of room for such changes and it is fair to say that even the last ten years have witnessed radical changes.

AS the basis of these changes, Professor Fink accepted aluminium as one of the principal, or rather as the principal, element. The reduction of price of aluminium, putting this very light metal within the reach of large mechanical structures, gives a cause for very radical changes, but one which has required some seventy years to reach its present development and which is still increasing very fast in varied uses. Enormously tall structures such as we have in this city in their perfection would be impossible except for the use of steel instead of masonry in their construction. If such a building as the Empire State were constructed of masonry, the walls of the lower stories would be so thick, in order to resist the crushing strain, that there would be hardly any room for occupants and the very object of the height would be lost. By using steel the walls are kept so thin that the lower stories are as open to use and of as good an area as the upper ones.

Aluminium has already played a part in the manufacture of steel. The metal from the open hearth or Bessemer converter is liable to contain oxides or oxygen gas. By adding aluminium to the melted metal, it takes up most or all of the oxygen forming aluminium oxide which goes off with the slag.

It seems a little uncertain whether it can be used for the main structure of buildings in place of steel, but it is merely a question of price which determines whether it can be used for many of the details. Iron, as we know, perishes by rust, if pure. Cast iron, which contains a quantity of carbon, is almost exempt from destruction by oxidation, but the so-called steel as used in the past is subject to relatively quick destruction. Chromium goes far to prevent this, but aluminium is subject only to superficial oxidation. The oxidizing of the surface protects the interior. Our metallurgists have produced rustless steel by alloying it with chromium as one constituent. The futility of attempting to lighten it is of course perfectly obvious. But the common clay of mother earth gives us this metal which does not perish by oxidation, which is very strong, very light and a good conductor of electricity, so that the lecturer we have alluded to very happily predicted the age of aluminum as due within ten years.

The Death Drum

By A. Hyatt Verrill

Author of "The Treasure of the Golden God," "Beyond the Green Prism," etc.

THIS is a very impressive story about the South American jungle, of the ways of explorers and of the life of the Indians. Mr. Verrill is one of the world's leading authorities on the ethnography of this region and he is also a great authority on South American archaeology. Here he depicts the white men and natives in intercourse, and we are sure that the story will be highly appreciated by our readers. The strange effects of the Indians' death-drum are a prominent feature of the story.

Illustrated by MOREY

I WAS crossing the Plaza San Martin in Lima, Peru, when hurrying footsteps and a voice calling my name, caused me to turn. The man who was approaching me looked as if he might just have escaped from the torture chambers of the Inquisition. He was clad in a strange mixture of ragged garments, patched with native Indian cloth and pieces of llama skin, and a worn and filthy poncho. On his feet were raw-hide sandals, and he wore a battered, disreputable felt hat jammed on his shock of long, unkempt hair. His face, covered with a straggling beard, was the color of leather and the parchment-like skin was drawn as tightly over the bones as the skin of an Incan mummy. His eyes, so deep set within their sockets that they seemed mere pin-points, burned with the unnatural fire of fever and his long, claw-like fingers were constantly moving, the hands opening, closing, as if striving forever to grasp some intangible something. "I'm Stirling!" he exclaimed as he reached my side. "I'm the sole survivor of the Matson expedition, I——"

"You mean you're Richard J. Stirling?" I demanded. "And that Matson and the others are——"

"Dead! All dead! Oh, my God, yes!" he cried. "Yes, I'm Stirling—Richard J. No wonder you didn't recognize me—" he laughed hoarsely, a terrible mockery of a laugh—"but that damned consul wouldn't believe me. He wanted proofs—Proofs after two years wandering in the jungles! And he wouldn't believe my story—said I was mad or that 'twas all imagination or hallucination due to fever. He was looking out the window when he saw you. "There's Verrill," he said. "Go tell him your yarn. He knows the interior and the Indians. Perhaps he'll swallow such an impossible story. So I hurried after you. You will believe, won't you? You know what incredible things occur in the bush, don't you? You'll know I must be telling the

truth. Say you'll believe me! My God, if someone doesn't I'll go mad I——"

"Hold on!" I interrupted. "You're all wrought up. Of course the consul wouldn't believe anything. He doesn't know any more about the country than any of the other young asses our government sends out. Yes, I'll probably believe your story unless it deals with the scientifically impossible—with the supernatural or occult. Anything else, however improbable, might be true. But come over to the club. I'm on my way to lunch, and I'll bet you'll be glad to eat some real white man's food and take the taste of roasted grubs and broiled monkeys out of your mouth by a good pisco cocktail." "But—but I can't go to the club like this," he protested. "I'm a disgrace, a scarecrow. I'll——"

I GRASPED his arm. "Bother how you look!" I told him. "You're my guest, and you've just come out of the bush. Food first, old man, and a good drink, and then for your story."

"But, but I must tell you!" he cried, his hands working nervously again, "I'll go really mad—I'll go—Oh, God! I can hear it now, all the time, in my sleep—beating in my brain—the Death Drum! If I don't tell you——"

"Brace up!" I commanded him. "You're nervous, wrought up—been through too much, Sterling. But you're safe now. Everything will be all right. And you can tell the story much better after you've eaten and have calmed down."

As I sat across the table from the weird being, who had gulped down his cocktail and was glancing about like some hunted animal or a jungle Indian, I could scarcely believe that the drawn, haggard, ragged, unkempt derelict was Dr. Richard J. Sterling, the dapper young ethnologist, who, two years before, had plunged into the Amazonian forests with the Matson expedi-



From head to foot he was painted black and white with scarlet stripes and figures. He wore a big bone skewer through his nose and a headdress with horns that gave him the appearance of Satan himself. All this I saw in the fraction of a second that he stood there before he dropped with a bullet through his brain.

tion. But I knew what hardships and privations will do to a man; the marks of the jungle were upon him, and I had no reason to doubt the statement of his identity. What his story might prove to be I couldn't guess. Perhaps it might be the recital of strange but perfectly obvious facts, perhaps, as the consul had so lightly assumed, it would prove merely the wanderings of an unshinged mind. It was obvious that he had undergone terrific hardships and suffering, and it was evident that he was really a sick man. Whatever his tale, he would be the better for the telling of it; it would relieve his mind, and moreover I was very curious to hear it. But he needed good food first, and the way in which he was wolfing it down indicated how hungry he was.

"I suppose you went to the consul to enlist his aid," I hazarded.

"Only to the extent of getting him to cable to the States for funds," he told me. "I have friends there, and some money. I didn't expect charity. But he wanted proof of my identity. I——"

"I'll gladly send a cable for you," I assured him, "but what you need most of all is a darned good rest and medical attention. Just as soon as you've told me your story I'm going to take you down to the Anglo-American hospital at Bellavista and let Dr. McCormack look after you. You've been through a lot, I know, and you've been racked with jungle fever. Now if you're through we'll go into the smoking room, find a snug corner and you can tell me your tale."

The Story of the Jungle

START at the beginning," I told him when we were comfortably ensconced with pipes going. "All I know about the Matson expedition is that it was supposed to be a scientific exploration of the unknown portion of the Gran Pajonal, although everyone knew that it was primarily a prospecting trip in Matson's personal interest. Also, I prophesied that it would fail. It was too large—fifteen white men could never get through with all the equipment necessary—it was badly outfitted and, yourself excepted, there was not a member of the party who was competent to explore unknown jungles. But as the expedition expected to be gone eighteen months we weren't particularly worried when it was a few months overdue. Unforeseen circumstances are always arising, there are invariably delays in jungle exploration, and there were chances that the party had gone down some river and had come out over in Brazil, Guiana or Venezuela. However, some of Matson's friends tried to get the government to send planes over the Pajonal to see if the party could be located, but the government wouldn't risk it. It's a dangerous place for a plane, and two that attempted to fly across about three years ago were never heard from. I——"

"I can tell you about those, too," Stirling exclaimed, interrupting my words. "They were brought down and destroyed just as were Matson and all the rest. The Death Drum of——"

"Hold on!" I admonished him. "We'll never get anywhere that way. I want a connected story—in proper sequence, old man. Let me see. The expedition started in at the Chicagüey River, I believe. Now fire away and tell me just what happened after you left the last outpost of civilization at Merced."

"Not much for several weeks," said Stirling. "Just the usual things—jungle rivers, half-civilized Indians. It wasn't until we got into the Pajonal itself that anything unusual happened."

"All right, begin where anything unusual *did* happen," I told him, whereupon he proceeded to narrate the following amazing tale.

"The trouble really began when we ran into some terrible rapids and lost two of our cayucos* with most of the provisions and a lot of equipment. I advised Matson to turn back, but he wouldn't listen. He said there would be game in abundance in the pajonal, that there were plenty of fish in the streams, and that Biddle, the botanist of the party, would be able to tell us of edible plants, and that we could easily live off the country and conserve our remaining supplies for emergencies. Two days later our Cholo or Indian carriers deserted us. But we didn't mind that. We didn't really need them, now that there was nothing much for them to carry, and their going meant just so many less to feed. Besides, we still had six Chuncho Indians along. But Matson was wrong. The farther we pushed into the pajonal the less game we found. I have never seen a place so barren of animal life. Even the monkeys were scarce. All we could find were a few macaws, parrots, toucans and now and then a boa or anaconda, and it was almost an impossibility to catch fish. If it hadn't been for our Chunchos we would have starved. It takes a lot of parrots and toucans to feed twenty-one men. But even the Indians had trouble getting fish. They shot a few with their bows and arrows, but most were secured by using mazetta—you know the stuff—the leaves which are pounded and thrown into the water and that stupefy the fish. But mazetta was terribly scarce. Biddle of course proved an utter flop. He didn't feel sure which fruits and roots were edible—he went entirely by their botanical relationships to other edible things—and several of us were deathly sick after eating some tubers he recommended. There was no use in arguing with Matson. He insisted we would go on—said it would be farther and harder to get back to Merced than to reach a tributary of the Maranon and go down to the Amazon. There were thirteen besides him and myself, and the others were all tenderfeet, as far as jungle work was concerned, so they stuck by Matson and it was hopeless for me to try to influence them. And of course I couldn't desert and go back alone."

The Meeting of the Indians in the Wilderness

THEN we met the first of the Pajonal Indians. So far we hadn't seen a sign of human beings—not even a deserted clearing or village. It was about seven

* Small fishing boats used in Venezuela.

weeks after we left Merced that we came to an Indian village beside a small stream. They were a subtribe of the Campas, I think, head-hunters of course, but friendly and peaceful enough. But as usual they didn't have any too much food for their own use. Still, the chief agreed to trade, and all was going pretty well when Matson happened to see the shrunken head of a white man among the old chief's trophies. He flew into a terrible rage, knocked the chief down, and seizing all the shrunken heads threw them into the fire. Then he declared he would take all the food in the village and pay nothing for it. For a space I thought there would be a fight, but instead, the Indians slunk off into the jungle and left their village to us.

I tried to conciliate Matson, pointed out that the head might have been there for years, that it might have been captured from some other tribe, and that, anyway, his high-handed actions could do us no good and in all probability would result in trouble; that the Campas would carry word of the incident to other tribes, and that even if they did not unite against us they would refuse to supply food. Matson merely laughed at me.

"You may know a whole lot about Indians—scientifically," he said. "But you're an ass when it comes to handling them. Beat 'em, kick 'em about, put the fear of God into 'em. I've manhandled a lot of 'em in my time and I know how to treat the devils. Think I'm afraid of a few lousy savages? Not much. And if they refuse to trade we'll just help ourselves, see? Now I'm running this outfit, and if you don't like the way I'm doing it, just turn around and hoof it back to Merced—or to some of your pet Indians."

We stayed in the deserted village that night, had the first good meal we'd had in weeks, and no signs of the Indians. But the next day, as we were marching single-file through the forest, Biddle and McGuire were killed by poisoned blow gun darts, and Johnson, the surgeon of the party, was fatally wounded by an arrow; yet we never saw nor heard an Indian. That was the worst part of it. You know how it is. No sign of a human being; just the jungle, silent, green, steaming; all of it mysterious shadows with just a trickle of sunlight here and there; gigantic trees, great fantastic buttresses, twisted, twining vines; a tangle of lianas (vines) overhead, damp soggy earth under foot; perpetual twilight. And then a sharp startled cry and a tiny sliver of palm wood sticking in some one's skin—and five minutes later, a dead man.

Cremation of the Victims—Foiling the Head-Hunters

WHY they didn't kill every one of our party is a mystery. Perhaps they thought they had evened scores, or maybe we got beyond their tribal limits before they had time to kill more of us. But I guess it was because we carried the dead men with us, so they couldn't get the heads. We couldn't bury them—eyes were watching us we knew, and the bodies would

be dug up and mutilated the moment we left. So we carried them along until we came to an open space beside a river. The river bank was out of blow gun range from the forest, and we didn't fear arrows very much, so we camped there. We didn't intend to let the Campas get our friend's heads, and we didn't like the idea of sinking them in the river for the crocodiles to eat, so we decided to cremate them. We built a big fire and placed the bodies on it. Then Elwin read a burial service—he was a religious youngster—studied to be a parson, he told me—and always carried a Bible. Perhaps cremation is all right—when done properly in a crematory. But that funeral pyre was a nightmare. God, it makes me sick to think of it now! Every few moments the fire would slump down on one side and the bodies would slide off—blackened, scorched, the flesh dropping from the bones! Horrible! Ghastly! And we'd have to get hold of them—Lord, will I ever get the stench of burning flesh from my nostrils!—and put them back in the flames. But at last it was over. Only the ashes remained. And then we had to sit there through the night. We didn't dare to sleep. We didn't dare to let the fire go down. I can't tell you how terrible it was. Sitting there with the black forest a few rods away, knowing lurking savages were watching, waiting, for a chance to put an end to one's life with a poisoned dart, expecting every instant to feel the twinge of pain that meant swift, terrible death, imagining a creeping naked Indian in every flickering shadow, and with the odor of burned human flesh still in the smoke of the fire.

But morning came at last. And with daylight we found our Chunchos had gone. I couldn't blame them for slipping away during the darkness, though how they ever managed it without some one seeing them is a mystery, I can't explain. But, however, they did it, they were gone. And we were alone—twelve white men in the heart of the Gran Pajonal, with vindictive head-hunters in the jungle about us, with no supplies, no porters to carry what equipment we had, no doctor in case of illness or injury, no guides.

To have pushed on through the jungle would have been suicidal. Our only hope was to take to the river. It was wide enough so we would be safe from blow-gun darts if we hugged the opposite shore. But we would have to build boats, or a raft. It would have been easy to have made woodsskins, the name for canoes, if our Chunchos had been there and if the jungle hadn't been filled with the Campas. But we couldn't even approach the edge of the forest to cut trees without exposing ourselves to the darts. We talked it over for hours. Even Matson realized the predicament we were in, though he wouldn't admit it was all his fault. At last we decided to try to swim the river, and if we made it, build some sort of a raft on the farther bank. Of course it was an awful risk. The stream swarmed with caymans (alligators). There were probably cannibal fish, and the current was swift. But it was better than staying there to starve or being shot down by poisoned darts.

Everyone of us knew how to swim; but young Elwin said he had never swum fifty yards before. Still, he was willing to risk it and Condon—a big good natured Irishman—offered to give him a hand if he got tired. Then we had to decide what we could take over. Most of the stuff we could leave until we had made a raft when we could cross over and get it. That is, if the Indians didn't get it first. But we had to take that chance, and the only opportunity they would have would be while we were crossing. Once we were over we could keep the stuff covered by our rifles. But we solved that.

Attack by Indians and Two of the Party Wounded

BARLOW offered to stay behind—alone—and guard the stuff until we could come back for it. He wasn't so keen on swimming, he said, and he'd rather risk the Indians than the crocodiles. Then Elwin said he'd stay, too. We thought that it was lucky he did, for Condon was grabbed by a cayman and carried down. But if he had known what was in store for him I guess the youngster would have chosen the crocodile way.

The rest of us made it. We had carried matches and an axe, and there was plenty of bamboo and balsa.* While we worked we heard Barlow shout, but we couldn't see any Indians, and both he and Edwin seemed all right. So we went on working. Suddenly we heard a scream and turned to see Barlow fighting with the Indians. We grabbed our revolvers—we'd left the rifles on the other side—but we couldn't shoot. If we had we'd have been as likely to hit Barlow as the Campas. They were fighting hand-to-hand on the bank. The Indians were using their long-bladed stabbing spears and Barlow was using his clubbed rifle. We couldn't understand why he didn't shoot, and we couldn't see a sign of Elwin. It was all over in a minute, but it seemed hours before Barlow broke away, dashed down the bank in a shower of spears and arrows, and dove into the stream. He was a wonderful swimmer and he got across all right. The Indians had crept along the bank and had rushed him and Elwin, he told us. The first warning he had was a cry from Elwin—that was the yell we had heard—and his rifle jammed. They got Elwin, cut him down with a spear; but he wasn't killed. Barlow saw them carry him off, writhing, unable to speak or scream, with blood pouring from the big hole in his throat where the spear had struck.

Barlow himself had a dozen wounds on his body and limbs. But none were serious. Of course the Indians carried off all our stuff. We took a few pot shots at them, but it didn't do any good, and we couldn't afford to waste ammunition—we had only a few rounds left

anyway—with days, weeks, perhaps months of jungle ahead of us. There was only one hope. The stream must flow to the Maranon or to some Amazon tributary, and if there weren't big rapids or falls, and if we could manage to get food enough to keep us alive, and if we didn't have trouble with the Indians, we would eventually reach some outpost of civilization. We got the raft launched late that afternoon. But we couldn't start off in the dark so we camped. We hadn't seen any signs of Indians on our side of the river, but the Campas might have cayucos and might steal on us during the night, and we couldn't sleep. That night we heard the war drums across the river. It meant that every tribe for miles would be against us. We couldn't count on any food from Indians after that.

Nothing happened that night, and as soon as it was light we started down stream—ten white men on a crazy raft of balsa and bamboo tied together with vines, with no food, no outfit, with less than a hundred loaded cartridge among us, and hundreds of miles of jungle and forest, unknown currents and rapids ahead. We didn't have one chance in ten thousand of getting through, but it was the only chance. But Matson had got as cock-sure as ever. He was impossible, but the others—all young fellows with no experience—thought him infallible. I didn't count. I was just a scientist. And Matson hated me because he knew I had been right about the Campas and the fearful mess he had made of everything.

CHAPTER II

IT was on the second day, I think, that we found Elwin—or what was left of him. Even Matson turned pale and grew sick when we found the body. It was floating down stream, nude, horribly mutilated, headless, of course. We had to do something about it so we towed it ashore and buried it. I couldn't help telling Matson what I thought.

"The Campas have got another white man's head to take the place of the one you burned," I reminded him. "Damn you, Matson, you're as guilty of Elwin's murder as if you had killed him yourself."

Matson grew purple with rage. For a moment I thought he would kill me. But he was just a big bluffer, and for the first time the others took my side. Besides, he knew it was true. But he never spoke to me after that. We managed to get on somehow for the next two or three weeks. We didn't strike any bad rapids. We didn't meet Indians, and we got food enough to keep us alive. Once we killed a sixteen-foot anaconda and we feasted on him for three days. Now and then we got a cayman and ate its tail. We brought down a few monkeys and herons, and caught some fish. But we needed vegetable food. Bamboo shoots and grass and water-lily roots were all we had. But there weren't any mosquitoes, none of us had fever, and our health was all right. It began to look as if we might

* The Spanish word *balsa* means a raft. It is used to designate a tree indigenous to South America, sometimes called corkwood. It is the lightest wood known, specific gravity of .25, which is to say it floats above one-eighth of the specific gravity of water. It is used as an insulating material for dry ice containers (solid carbon dioxide) and for other analogous purposes, as for beverages or for ice cream. Its botanical name is *Ochroma lagopus*.

get through after all. You must never lose hope.

It was then that we met the Xinguays. I don't know how long we had been on the river. We didn't keep count of days, but I should say it was about three weeks when we came to the Xinguay village. It wasn't on the main stream. We were darned hard up for food, and coming to a big backwater or lagoon, we went into it, hoping to find game. We hadn't seen a sign of Indians for days. We hadn't heard a war drum since we had taken to the raft. And as it looked like a game country and we had to have food, we decided to risk meeting any stray Indians and to go into the bush on a hunt. No one wanted to remain on the raft alone; and no one wanted to go into the jungle alone. We all wanted to keep together, and as we had no equipment to lose we moored the raft and started into the forest. Of course we separated somewhat. But game seemed as scarce as ever. Still, we found some deer tracks and that was promising, and after a time I knocked over a big crested curassow that I saw in a tree. We stopped right there and cooked and ate him. We felt better then, but we were just as madly off for our next meal as before. So we went on.

After an hour or two we came to a hill, or rather a small mountain. It was the first high land we had seen since leaving Merced, and as we might get a good idea of the country from its summit, and as it was as good a place to hunt for game as any, we decided to climb to the top. For the first five or six hundred feet the slopes were jungle covered. Then we came to open forest. At about fifteen hundred feet we came out of the forest to the edge of a lake and there was the Xinguay village. We came upon it so suddenly and unexpectedly that we didn't have time to dodge back before we were seen. I knew the moment I saw the people that they were an unknown tribe. They were a taller, lighter race—no "white Indians" of course, but not brown like the Campas and Jivarros. And their head dresses and ornaments were new to me. Of course they saw us instantly and scuttled into their houses like so many scared rabbits. Matson swore and grinned. "Now we'll get food," he exclaimed. "No danger from that bunch, they're scared stiff at sight of us. Come along. And if any one of 'em shows fight just knock him down. There aren't more than a couple of dozen bucks in the place, so if anything breaks we can clean 'em out easy enough."

"Look here, Matson," I said, "If you treat these people decently I don't believe we'll have any trouble. I doubt if they have ever before seen white men—that's why they ran off at sight of us. But don't fool yourself into thinking they're harmless if aroused. And for Heaven's sake don't start your rough-house tactics here—we've had enough trouble through your methods already."

He ignored me completely and turned to the others. "Remember what I told you," he said. "Don't stand any nonsense, and this time if trouble starts, clean 'em up—that's where we made a mistake with that other bunch. Come along."

The Village of the Xinguay Indians

THERE wasn't a soul visible when we entered the village, but we knew the Indians were there. And if they had been hostile they could easily have killed us from their hiding places. Of course I didn't know their dialect, but I thought they might understand Putamo, which is a sort of *lingua-franca* of the bush, you know, so I shouted out that we were friends and wanted to trade for food. Evidently they got the meaning, for pretty soon one or two men appeared, and I had the jolt of my life for they wore heavy beards falling over their chests. Yes, just like those bearded Sirionos you reported from Bolivia. And I noticed they didn't carry blow guns, just heavy bows and wooden-tipped arrows and war clubs. They couldn't speak Putamo, even if they understood it, but they were good at sign language and they led us to a big open space and passed around chicha and food—roasted wild yams, manioc and some smoked meat. One by one others appeared, but most of them kept some distance away. They were friendly enough, and even Matson couldn't find any excuse for brutality, but the only things we had to trade were the clothes on our backs and whatever odds and ends we had in our pockets. I spoke to Matson about this and he laughed. But he wouldn't answer me directly and turned to Jerome. "Tell Mr. Know-it-all, that I'm not going to do any dickerling with this bunch," he said. "We'll stay here till we get fed up and rested, then we'll help ourselves and beat it. These fellows with the whiskers are about as dangerous as a couple of canary birds. I'll bet if we shot one of the bunch, the others would turn tail and run—like as not they've never even heard a gunshot."

I was about to say something but bit my lip. What was the use? Matson was brutal, conceited, utterly incompetent. It was a great pity he hadn't been killed in place of Barlow or Condon or one of the others. If he had, what followed wouldn't have occurred and the rest of us would have come through. But it wasn't Matson himself I was thinking of. He deserved all that was coming to him. No, the worst of it was that we—the others—would be the ones to suffer for his crazy-headed behavior. Still, the Xinguays seemed so peaceable and timid that I felt that even if we did help ourselves to their supplies they probably wouldn't resist or even protest, and so there wouldn't be any trouble. God, how little I knew them!

Finding the Death Drum

AFTER we'd eaten and rested a while we began wandering about the village—that is, I wandered about among the houses, for I was tremendously interested in the people and their customs—but the others went over to the edge of the lake for a swim. "Say, Doc!" exclaimed Pembroke when they came back, "there's a queer looking dingus over back of the big house that may interest you—looks like pipes out of a church organ."

Wondering what he had found, I went across the little open plaza-like space in the centre of the village and walked back of the big house as Pembroke called the council-house. I didn't have to hunt to find the "dingus." And I was interested. As Pembroke had said it looked a bit like organ pipes—three big wooden cylinders, the largest twenty feet long and a foot in diameter, the ones next to it a little shorter and smaller and the third about six feet in length. The three big tubes were bound together with lianas (vines) and rested horizontally on a wooden framework. Of course you have guessed what the thing was—a gigantic Pan's pipes, and that's what I took it to be, at first. But it was a lot more than that. Inside the ends that pointed towards the plaza, were a lot of criss-crossed strings, and at the other end of the contrivance—where a Pan's pipes would have mouth pieces—there was a queer arrangement of wood, like some sort of a drum with three bamboos leading from it into the big pipes. I was examining the thing, when I happened to look up, and found there were Indians all around watching me. And they didn't look pleased or friendly either. Well, I hadn't touched the thing, and thank God I hadn't, so there was no harm done. But evidently the thing was taboo to me—probably some religious or ceremonial object I decided—so I gave the chief some empty pistol cartridges I had in my pockets and walked away, and felt the incident was closed. I guess perhaps it would have been at that, if Matson had behaved himself. But he was one of those fools who always want to show off before other men and impress them. And the Xinguay chicha (fermented drink) was pretty strong and Matson had taken a lot of it. He was hilarious, he was laughing boisterously, and I was worried. "I think we'd better get out of here before we have any trouble." I told Pembroke, "Matson's half drunk and he's as dangerous as a spark in a keg of gunpowder when in that condition. Better suggest it's time we should leave." And as I didn't want to start trouble I kept in the background.

"All right, he says to tell the Indians to bring in all the food they have," Pembroke told me after he had talked with Matson. "When we've taken what we want we'll be off."

"I won't," I told him flatly, "That is, unless Matson agrees to give them something in return. "You can tell him that's final."

Matson jumped to his feet when Pembroke delivered my ultimatum. For the first time in days—and for the last time forever—he spoke to me directly.

"Damn you!" he shouted, "Think you'll stop me that way, do you? Well, I do my business my own way. If these beggars don't bring in the grub I'll take it. I take what I want when I want it; see? Come on, boys!"

I don't know whether the others were cowed and afraid of Matson, or whether they thought they must do as he told them. But they followed him blindly, always. I knew if he began raiding the village that there would be trouble, and hurrying to the chief I tried

to explain that Matson and the others wanted food for their journey. He turned and gave some order to the other Indians, and they hurried off. Then I yelled to Pembroke to tell Matson that I had told the chief, and to come back and wait for the people to bring provisions.

The Search for Food and the Attack

BUT it was too late. Matson had pushed his way into the first house. I heard shrill cries from inside the hut—women's cries, I thought. Then Matson's guffaw and a curse. Almost at the same instant I heard a strange, low toned, throbbing sound—like the distant booming of a drum. I couldn't seem to place it. It sounded far off, yet it seemed to be near, and I could feel its pulsation rather than hear them. And it appeared to come from all sides. I turned to ask one of the Indians what it was, but there wasn't an Indian in sight. All this happened in an instant, you understand—the woman's cry, Matson's laugh and curse, the strange throbs which was growing louder and stronger like the roar of an approaching airplane. The others must have heard it, too, for they had all halted, standing in the open space in the centre of the village, looking about, listening.

The next instant Matson came staggering from the hut carrying a big basket in one hand and dragging a young girl with the other. "Go ahead, help yourselves, boys!" he shouted. "Plenty of grub for the takin', an' girls if you want 'em. Cheer us up on our trip. Come—"

As if conjured by magic a weird, terrifying figure appeared from somewhere—a figure wearing a horrible, grotesque mask and clad from head to foot in a cloak-like garment of leaves, bark and feathers. With upraised stabbing spear he rushed straight at Matson. With a single, swift motion, Matson dropped the basket of food, whipped out his revolver and fired from his hip. The masked figure spun around and crashed to the ground. Matson glared about, smoking pistol still in his hand. "Try to stick me, will you!" he shouted. "Come on, try it, you devils." Turning to the struggling, screaming girl he dealt her a vicious blow with his revolver barrel. She collapsed senseless, and her captor kicked her aside. All this time—it had been but a few brief moments—I was aware of that pulsating, throbbing roar, each second increasing in volume, until the air seemed vibrant with it. There was something indescribably menacing in the sound—like the warning humming of angry bees. Meanwhile, the girl regaining consciousness dashed for safety into the bush; at this action there was a new note.

The Death Drum Is Heard with New Power

OH, my God, how can I describe it! It came like the shriek of a lost soul, like the wail of a tortured spirit. It was as if all the fiends of hell were screaming for vengeance. It was as if the very heavens

were being rent asunder, the universe torn to shreds! It terrifies me even now. I'll go mad thinking of it! Never for an instant, day or night, has it ceased beating upon my brain, tearing at my ear-drums! It was not only the awful sound itself—as if a thousand steam whistles were blowing within six inches of my ears, it was an actual physical thing, tearing at me like a hurricane, pounding me like a million hammers. It seemed to be crushing my skull, searing my brain. I felt blinded, deafened, tortured as if on a rack. And dimly, through the agony, the dread terror, the indescribable vibrating sound that seemed disintegrating my very bones, I saw Matson and the others struggling, writhing, falling prone there in the open space beside the body of the masked Indian.

That was my last sensation. When I again returned to consciousness, utter silence reigned; but within my brain was a chaos. All the agonies of the damned seemed centered in my head and body. I was powerless to move, I was paralyzed. I felt as if I were being spun at terrific speed lashed to the rim of a gigantic fly-wheel. I don't know how long I had been unconscious. I can't even say how long I lay there, conscious, suffering tortures beyond human endurance, motionless, dead save for the spark of reason, the ability to suffer, in my brain. Nothing seemed real except the agony. Everything else seemed a dream, a nightmare. Yet I remembered what had occurred. I remembered Matson dragging the girl from her hut, the masked Indian, the sequel, the terrible, soul-searing, mysterious sound—and—yes, that fearful scene that I had glimpsed the moment before I had lost consciousness—the sight of Matson and the others, writhing in agony, falling in contorted shapes to the earth.

Recovering from the Effects of the Death Drum— An Attack

WITH an almost superhuman effort I forced my eyes to open. With an even greater effort I managed to turn my head so I could see something other than the sky above me. A horrified groan escaped my lips. Standing over me was a bearded savage Xinguay with a short bone-headed spear in his hand. Another instant and—Sheer horror galvanized me into life. With a wild inarticulate cry I sprang up. The effect upon the Indian was amazing. He reeled back as if struck, the spear fell from his hand, and with a hoarse yell of abject terror he fled.

I couldn't understand it. Remember, my mind was in a turmoil and I was sick, nauseated, weak, and every bone on my body aching. It was like break-bone fever only worse. Then it dawned upon me. No wonder the Indian had fled; he had thought me dead and I had come to life. Thought of death whipped my mind to memory of my comrades. Were they all dead? I stared at them where they still lay, silent, motionless, where they had fallen just before I lost consciousness. The Xinguays had withdrawn. They were standing on the farther side of the open space, gazing at me, not

knowing what to expect from a dead man who had come to life; all their superstitious fears were aroused. I rather wondered why they should act that way, why they didn't reason that I had merely been unconscious. But later I knew. Good Lord, no wonder they thought me immortal! With difficulty, groggily, every step bringing a groan of agony from my lips, I moved towards the bodies of my comrades. Bodies! Oh, God have mercy! They were mere heaps of pulp, blobs of jelly under their garments! Ugh!!—"Stirling shuddered as he spoke to me, and his face paled at the recollection—

"It was too ghastly for words. But I *must* tell you, I'll go stark, staring mad if I don't. There was nothing human about them—they were like stranded medusae cast up on a beach—shapeless, formless. Only their eyes! Their eyes—"

Stirling almost screamed the words. He shook as if with a chill. Sobs racked his emaciated frame. But in a moment he regained control of himself, and continued:

"No, no, I must give way! he exclaimed. I must go on! Their eyes! It was the most ghastly, most horrifying, most terrible sight!"

Only by their clothing could I distinguish one body from another. Matson, Pembroke, Jerome, Barlow and the others—nothing but blobs of pink, pulpy flesh, as boneless as though a steam roller had passed over them. They were—Yes, that was it! They were like dead octopuses with the featureless heads taking the place of the devil-fishes' bodies, with their goggle eyes staring upward at the sky. Suddenly something seemed to snap in my brain and I laughed wildly, maniacally.

A Lone Survivor of Fifteen Men

OF all the fifteen white men who had set out from Merced, I alone survived; a single white man in the heart of the Gran Pajonal, a single civilized human being among unknown savages! For a moment I think I must have gone quite mad. I screamed, yelled, cursed, laughed by turns. Thank God that in His mercy He so willed it, for it was that temporary fit of madness that saved me, that enabled me to survive, that let me escape and that brought me here—here to tell you of the Death Drum, to let the world know the fate of the fourteen men of the Matson party. Of course you know why. You know that a crazy man is safe among any Indians, that they regard him with superstitious awe, as a being in touch with the gods. How long I was out of my mind, I don't know: It couldn't have been but a short time, for when I became rational I was still there in the plaza. But now the Indians—or at least two of them, one of whom was the chief—were near me, kneeling, kowtowing to me. They managed to make me understand that they only awaited my commands. Commands for what? I wondered. Then I understood. My orders as to the disposal of my dead comrades. I didn't know then how

the Xinguays disposed of their own dead. But I felt sure it would not be by burial. I tried to tell them what I wanted done. But it was no use. Besides it would have been impossible to have dug graves, or even one big grave, for the nine. And I was too weak, too shaken, too utterly sick at heart to care very much what became of those poor, distorted, shapeless, pulpy things that had once been my fellow men.

So I told the Xinguays to do whatever they did with the bodies of their own people. I was almost afraid to watch. I knew the Xinguays were not head-hunters. And even if they had been, the heads of my comrades would have been worthless to them. But I didn't know what even more horrible funeral rites might be in vogue. Some of the jungle tribes have pretty rotten customs, you know—boiling, macerating, cannibalism. But I needn't have worried. The Xinguays used burial caves. It was almost more than I could endure—watching them lift those boneless horrible things, that had been men, upon litters. But it was done at last. I didn't know any burial service and no one but Elwin had had a Bible. But I managed to say a prayer as the funeral cortège started for the caves. I was too weak to go with them, and that was all I could do.

It was better, once they had been taken from sight. The whole thing seemed more like a nightmare, an unreality without them. And, now that my brain was working more calmly, I wondered what had really happened, what had killed my comrades, what had been the cause of their revolting disfigurements. There hadn't been a blow struck, I hadn't seen an arrow discharged or a spear thrown and yet—Suddenly it dawned upon me! It was that noise, that fearful, soul-searing vibratory note! It seemed incredible, utterly preposterous. But I knew it must be so. The agonies I had suffered from it, the brain-racking pounding as if actual blows were being struck upon my skull, the fact that I had fallen unconscious from its effects convinced me. And was it so incredible, so fantastical? I remembered that my professor of physics in college had taught us that steel, stone—any substance—can be destroyed by some certain vibration. That if the proper vibratory wave were struck the strongest edifice would crumble. I remember he pointed out that rhythmic vibrations are so destructive that in the days of horse-drawn vehicles all bridges bore signs requesting that drivers walk their horses over the structures, and that he had told of a man who had broken the trunnions of a huge, sea-coast defense cannon by tapping them regularly, and with measured strokes, with a tack hammer.

If metal, if stone—could be disintegrated by vibrations, why not animal tissues, bones? That was it! Disintegrated! That was the word! That was what had happened! My comrades, standing there in the plaza, had been disintegrated by that hellish vibratory note from the Death Drum. No wonder their bodies had been shapeless, pulpy! Every bone, every vestige of their skulls had been disintegrated, reduced to powder!

But why hadn't I been killed? I had heard the note.

I had felt the excruciating agonies that had torn me, as it rose louder and louder. And I had lost consciousness.

I COULD think of but one answer. I had been apart from the others—twenty yards at least from the spot where they had stood. I must have been outside the sphere of death—just on the verge of the vibrations that killed. Probably, I thought—and later I knew this to be the case—the damnable, hellish contrivance projected its deadly vibratory notes in a beam of waves of sound just as a search-light projects its beam of light. And just as an object on the edge of the light-beam may be but faintly illuminated, and an object beyond that may be entirely outside the range of its light, so I had been but slightly touched by that awful beam of vibrations which had been directed upon my comrades.

But that didn't account for some things. A beam of light might be controlled, confined to a certain sharply defined area. But the sound of the Death Drum—any sounds—travelled in all directions. If it had been the sounds that had destroyed my comrades, that had so nearly killed me, why hadn't everyone—even the Indians—within hearing of the hellish thing been affected? And how could human beings—the Indians—operate the awful device, stand beside it and not be disintegrated?

There was another matter, too, that kept hammering at my brain. Why had the eyes of my comrades escaped destruction? Why had they remained intact when flesh and bone had been reduced to jelly?

I couldn't reason it out; but I found out later. And I know you'll want to know, so I may as well tell you now. You remember I spoke of the masked Xinguay? Well, the reason he was masked, the reason he was clad in leaves and feathers, was because wood and leaves are immune to the effects of the vibrations. Just as rubber, bakelite, glass serve as insulators against electric currents, so wood and leaves served as insulators against the death-dealing waves of sound from the Xinguay's Death Drum.

Wood and leaves and yes—one other substance: water! That's why the eyes remained untouched. And the sounds—outside of the concentrated, focussed beam from the projectors, are not dangerous. They are merely sounds. Even the Indians operating the damnable thing were safe enough. But they didn't take chances. They wore long coats of leaves and wooden masks. How could they see? How could they leave openings for their eyes without danger? How could they leave hands and feet unprotected? you ask.

They covered their hands and feet with beaten bark cloth, and tiny holes let them see without danger, for their eyes are in themselves ample protection to their brains—Don't you see? Besides, they never get the full effect of the vibrations—they were careful about that. I don't think even their masks could have saved them if they had entered the beam itself.

Protection from the Death Drum

BUT wood, leaves are wholly unaffected, I've seen the Xinguays turn their terrible, ghastly Death Drum towards the jungle and destroy game, enemies, and yet leave the trees, leaves, ferns, even the delicate flowers untouched. Only animal matter is disintegrated, and not all of that. Skin, integument, hair, are not injured, but the vibrations pass through them and utterly break down other tissues and bone. What is the effective range of the damnable thing? I don't know. Half a mile at least, perhaps more.

At certain times of the year vast numbers of water fowl came to the lake. I've seen the Death Drum bring these down by hundreds, thousands, and the lake was fully half a mile from the village. It was like a cannon in a way. It could be swung to right or left, elevated or depressed, aimed in any direction.

You said three airplanes vanished in the Pajonal. I found them. Twisted masses of metal and wood overgrown with vines and brush. I had learned to talk Xinguay fairly well by that time, and I asked the Indians about the planes. They seemed greatly surprised when I told them they were white men's machines and were flown by human beings. They had thought them giant birds, they told me—dangerous, gigantic birds of prey coming to attack them. So they had turned to their one greatest means of self-protection and defense—the Death Drum—and had "killed" the great birds. They were puzzled to find the birds' "bones" had not been destroyed. But as the planes had taken fire when the pilots had been disintegrated and they had plunged into the forest, there were no traces of human beings for the Xinguays to find.

But I'm getting way ahead of my story. I must go back—back to that awful day when I sat there, alone, a solitary white man in the Xinguay village with all that remained of my nine comrades laid to rest among the bodies of the Indians in the burial caves in the mountain side.

CHAPTER III

OF course I had gathered the fire arms. There were six rifles and eight revolvers—I never carried a pistol myself—a regular arsenal for one man. But it was awful trying to get the ammunition. I took one cartridge belt—from what had been Matson—but I almost fainted before I got it. But the Indians didn't mind—they were accustomed to such sights—and when I made them understand what I wanted they brought me all the cartridges there were. The one really sensible thing that Matson had done was to see to it that all the rifles and pistols were of the same calibre and used the same ammunition. I almost forgave him all the rest because of that foresight, for I had about four hundred rounds that I could use in any one of the guns. With care that should last me a long time, I decided. And it might be a long time before I had a chance to get out of the Pajonal. Of course I didn't need so many fire-arms.

But some of them might give out or get rusty so I decided to keep them all—at least for a time. And I would see to it that they weren't loaded—the Xinguays might get fooling with them; and I'd keep one revolver ready for use in case of emergency. But the main thing that occupied my mind as I sat there, while the Indians were off conducting the funeral, was how I could manage to escape and find my way back to civilization.

After a time the Xinguays returned and held a council. I couldn't understand what they said, but I guessed they were discussing my case. And I judged by their tones that they didn't agree about me. But I wasn't worried. You know how it is. You've been in a lot of tight places yourself, and you know how, after a man has gone through a lot and has dangers confronting him wherever he turns, he gets so accustomed to them that they don't mean anything to him. It just doesn't seem to matter, you know. That's the way I felt. I wasn't afraid any more. If worse came to worst I could make an awful mess of things—with my guns and four hundred cartridges—before I used the last one on myself. In fact I found myself unconsciously filling the guns' magazines. But guns wouldn't be much use as long as the Xinguays had that damnable Death Drum. For a moment I even had a wild idea of destroying or smashing the thing—a few well placed rifle bullets would do the trick. But that, I knew, would make my death certain. And if the Indians did decide to get rid of me, it was not likely they would go to the trouble of using the Death Drum to kill me. If they had wanted to do so, they could have killed me at any time, while I'd been dazed, half crazy, almost faint, standing over by the bodies of Matson and the others. No, I didn't think I was in any peril as far as the Indians were concerned. They regarded me almost as a sort of god—a dead man come to life. And they thought me crazy. I'd have to play the fool if I stayed among them long. If I acted like a rational being all the time they might begin to think me a sham.

The Honesty of Primitive Indians

AFTER a time the council broke up and the chief and another man came over to where I was sitting. Oh, I forgot to mention that I had our nine machetes, as well as the guns. They were my real treasure. Any Indian would give anything he owned for one of them. Of course they could have helped themselves and I wouldn't have been in any position to protest. But really primitive Indians are honest, as you know, and I counted on that. Well, the chief began to talk and use signs. For a time I couldn't get the drift of what he meant, but when it finally dawned upon me I began to think I must be really crazy. He was asking my forgiveness for having killed the rest of the party! He and his people hadn't realized, he told me, that the white men were gods—Imagine, Matson a god! If I demanded it, he went on, he would order the girl who had caused the trouble, to be sacrificed to appease the

spirits of my comrades. She had not appeased Matson.

But if I would forgive them, they would be my slaves, my wish would be law. And the old fellow even thought I had done his tribe a tremendous honor by permitting the bodies of the slain gods to rest in the caves with the defunct Xinguays. Still, some of the tribe must have had more sense, or else they were less-superstitious than the others, for the fellow with the chief—who was the witch-doctor I found out later—wanted to know how it was possible for gods to have been killed. That started an argument between the two factions. The chief insisted that, as I was a god, as all admitted, then my friends must have been gods too. I could see a lot of trouble ahead if any doubts were left unsettled, so I told them that the reason my fellows had been killed was because they hadn't had time to prepare themselves—which wasn't far from the truth at that—and that I was the only one who had been able to do so. And to clinch the matter I gave both the chief and the medicine-man a machete. After that anyone who questioned my divinity would have signed his own death warrant.

There isn't any use boring you with all the details of what happened after that. The Xinguays gave me a good house to myself—offered me the pick of the girls for my wives—which I didn't accept—and supplied me with the best of food. But I wanted to get away, to get back to my fellow men, and I didn't dare suggest that, nor could I sneak off by myself. In the first place I didn't know how they would take the idea of losing their white god, and as there was a guard constantly watching over me I couldn't run off. I wouldn't have tried that anyway. Bad as it was to be a virtual prisoner among the Xinguays it was a lot better than wandering through the jungle alone. The fact that I had weapons and plenty of ammunition didn't alter that. I knew a white man couldn't live off the jungle. I didn't even know which direction to follow, and I didn't have equipment. Any accident, any illness would mean an awful lingering death alone in the bush. Perhaps I might have considered using the streams—drifting down to some place where there were white men—if I had had a canoe, and if there had been a river near. But the Xinguays didn't have canoes and there wasn't any river in the valley. In fact the valley was an extinct volcano crater, I discovered. And there wasn't a member of the tribe who ever had ventured beyond the crater's rim. Everything beyond the summit of the ridge was *Tumai*—Taboo—to them. Outside, they said, there were devils; terrible devils who sometimes came to the valley and attacked them. Only by the Death Drum could these devils be destroyed. And even with that means of defense the Xinguays lived in constant dread of these devils.

Learning the Xinguay Language

Of course I didn't find out all this right away. Not until I had learned a bit of the Xinguay language. But that wasn't hard. I always had a knack

at learning Indian dialects, and my knowledge of Putamo was a big help. I couldn't understand how the chief and some of others happened to understand Putamo, if they had never been beyond their valley. But after I could talk with them I found out. Years before, they had found a strange man—an Indian—wandering near the lake. He was a great medicine man they said, because he knew how to make fire by using a bow-drill and how to weave bark fibre into cloth and many other things. And with the idea that by so doing they might acquire merit and some of his superior knowledge, the chief and a few others had learned his language. That, they explained, was why my party had been received so well and had been welcomed. Because I spoke to them in Putamo they had at once decided we were great medicine-men or superior beings. But all this must bore you. I don't know how long I had been with the Xinguays—it must have been months—when the "devils" appeared. The first warning I had was when a man came running into the village from the jungle shouting that the devils were coming.

Instantly everyone began yelling and running. The women and children scuttled off somewhere, the men, seizing their weapons, raced after them, and then from the Council House appeared a group wearing those fearsome wooden masks and bark robes. I knew what that meant. The Death Drum was about to be used. I didn't lose any time. Grabbing two of my rifles and all the cartridges I could carry I rushed in the direction the women and armed men had taken. Whoever or whatever the "devils" might be, it was evident a battle was near, and I didn't believe in devils who could resist steel-jacketed bullets. And I kept as far from the Death Drum as possible. But I didn't get very far. Something whizzed past my head, and instinctively I dropped to the ground. I've found that's the best way. If you duck behind a tree you can't see your enemy without exposing yourself, and I knew by the sound of the thing what it was—a poisoned dart. But if you fall flat the Indian will think he's got you and nine times out of ten will show himself. But of course you know all that. Anyhow it worked. Not fifty feet away an Indian stepped from a clump of palmettos. He carried a blow gun and I didn't wonder the Xinguays thought his kind were devils. From head to foot he was painted black with white and scarlet stripes and figures. He wore a big bone skewer through his nose. There were feather ornaments in his cheeks, and he wore a headdress with horns that gave him the appearance of Satan himself. All this I saw in the fraction of a second that he stood there before he dropped with a bullet through his brain.

At the report of my rifle the jungle seemed suddenly to be alive with the "devils." Yells, cries, came from every side. From clumps of bush, from behind trees, from thickets, painted, fantastically decorated Indians appeared as if by magic. But, instead of rushing me, they turned and ran. Evidently they hadn't counted on being greeted with fire arms. Probably

they had never even heard a gunshot. But they couldn't outrun bullets.

For the first time in my life I wanted to kill. I don't know why, exactly. Probably because they had tried to get me. Maybe because these savages were after the Xinguays and the Xinguays were my friends—my people as I had almost come to think of them. I've had trouble with hostile Indians before then, but I'd never felt any urge to do any unnecessary killing—if they went off and left me I was satisfied. But this was different. I was mad to kill, and I blazed away as fast as I could shoot. I don't know how many I hit. But I saw several go down. Then, suddenly, I heard that sound—the throbbing of the Death Drum, and the blood seemed to freeze in my veins. Suppose the Xinguays should turn the horrible thing in my direction! They were bent on wiping out the "devils." The woods were full of the raiders. The Xinguays didn't know I was there and at any instant— Seized with a panic of fear I leaped up and raced blindly, madly through the jungle, unmindful of danger, heedless of possible savages and poisoned darts, my one idea to escape that awful sound vibrating through the forest in my rear. Not until I fell, utterly exhausted, did I stop. Then, burying my face in the ground, covering my ears, I waited. But nothing happened. At last, with an effort, I sat up, listened.

The Effects of the Death Drum Far Off

ALL was silent. The awful sound of the Death Drum had ceased.

Still trembling I looked about, trying to get my bearings, I was far up the hillside. Below me between the trees I could see the gleam of the lake. It was lucky for me that I had run. As I slowly retraced my steps towards the village, I almost stepped on what remained of one of the "devils." I had thought that nothing on earth, nothing in hell could be more awful, more horrible than—that what I had seen there on the village plaza. But this thing in the jungle was worse. And made even more unspeakably horrible by the painted stripes and figures covering it. Nauseated, filled with dread loathing, as terrified of finding another of the things, as a small boy in a cemetery at midnight, I picked my way onward, staring ahead, shaking with dread at what I might see. But I couldn't avoid them. Good Lord! the jungle was full of them! And here and there, too, I came upon little piles of feather-covered pulp, remains of birds struck down by that devilish sound.

Yet all that I had seen in the forest was nothing to the sight which greeted me when at last I reached the village. The place was a charnel house. No, NO! A thousand times worse than that! Oh, my God, words cannot describe it! I don't know how many of the savages had attacked the villagers. I don't know how many had been destroyed. I turned away sick, faint with the horror of it. Yet some of the raiders must have survived. Some must have man-

aged to escape the vibrations of the Death Drum, for I saw Xinguay women wailing beside the bodies of their men. And all of these slain Xinguays were headless!

Death of the Head-Hunters

THAT explained it. The "devils" were head-hunters. And that was why the Xinguays regarded them as devils, for by taking their victims' heads the raiders robbed them of their souls, according to Xinguay belief. A headless body could not even be placed in the burial caves among the other Xinguay dead. It was merely offal, and as such was consigned to the same fate as the disintegrated remains of the head-hunters. What that fate was I soon learned. At one spot on the mountain side there was a bare rocky cliff, inaccessible from below, and at its base was a yawning black hole—the opening to some bottomless subterranean fissure whence, at times, a column of sulphurous steam floated upward. I had found the place during my wanderings, but I had given little heed to it, aside from making a mental note that it proved the volcano wasn't as dead as it seemed, but was only sleeping. And I never dreamed—never could have imagined—the use to which it was put by the Xinguays. It was their Inferno—their private hell! Carrying the decapitated bodies of their slain comrades, and the shapeless things that had been head-hunters, the Indians climbed to the summit of the cliff and dropped their burdens into the yawning, steaming pit below—consigned them directly to Hades—to the place where "devils" belonged!

It's funny how a man's mind works sometimes. In the midst of all the horrors a quaint thought came to me, and I actually chuckled. What would be the result should the Xinguays get possession of the shrunken heads of their tribesmen? How could they adjust matters, once the headless bodies had been destroyed and then the bodyless heads were recovered?

But I soon found out. A party of the Xinguays came out from the jungle carrying two human heads. The beards proved them Xinguays. Evidently some of the fleeting raiders had been overtaken and killed and their grisly trophies had been retaken. Of course there was a great to-do. A funeral ceremonial dance was held, and the two heads were carried off and placed in the burial cave. You see the heads were all that counted. They were the abiding places of the souls, and the rest of the body didn't amount to anything. That discovery was like a tonic to me. I was so interested, scientifically, that, for a time, I was quite happy. Even that damnable, maddening reverberation in my head seemed to let up. It really was a great discovery, for it was the key to the origin of head hunting.

You see it, don't you? By taking an enemy's head an Indian not only destroyed his foe's chances of a happy hereafter, but—so he believed—had the soul under his control—literally took possession of the

other, body and soul, as it were. That's why head-hunting is such a wide spread custom among savages all over the world. Yes, I know the question that's in your mind. Why didn't the Xingtays take heads? I asked myself the same question, but it's easy to answer. Their only enemies were the head-hunters whom they believed to be devils. And as devils aren't supposed to have souls nothing could be gained by taking their heads. And even if by some chance they did have souls, they would be dangerous things to have about. Besides, most of the head-hunters were killed by the Death Drum, so there weren't any heads to collect.

I COULD tell you a lot about the Xinguays—interesting ethnological stuff—but that must wait. If I can ever get this damnable hammering of the Death Drum out of my ears, and can shake off the horror of it by telling about it, I'll write a monograph on the Xinguays. And they weren't a bad lot—not when I came to know them and understand them. But they were an amazing paradoxical people—absolutely primitive in some ways and far advanced in others. Still in the stone age, but with that infernal Death Drum which was ahead of anything our scientists have invented in the way of weapons. And they believed in a human soul and in heaven and hell and a hereafter. Yes, and in a supreme being—a Creator, too. Of course I know the Incas had that same belief; but I'll swear the Xinguays had never been in touch with the Incans. Fact is, I don't believe they were Indians—really. I'm positive they were Semitic—descendants of some wanderers from eastern Europe of the Mediterranean who reached South America ages ago and became isolated in the interior. But that's neither here nor there. I mustn't bore you with my suppositions and theories.

I don't know how long I lived with the Xinguays. Time didn't seem to matter much. And always the one thing uppermost in my mind was to get away—get back to civilization. Queer, isn't it? All my life, pretty nearly, I'd been getting away from civilization whenever I could—crazy to be in the bush, among uncivilized tribes of men. And then, when I was there in the heart of the Pajonal and among primitive savages, I was mad to get away. I don't know why, either. I had everything I really wanted—good food, a comfortable house, everyone trying to please me, nothing to worry about—even a dozen wives or more if I had wanted them. Maybe it was that damned Death Drum. I seemed to hear it all the time. I woke up in the night, shaking, clammy with horror from nightmares in which I felt it tearing at my brain, felt it disintegrating my bones. I tried to force myself to throw off my terror of the thing, to forget the unspeakable horrors I had witnessed. I told myself that death was death, no matter how it came to one, that what happened to a human body after life had fled didn't matter. I argued to myself that it wasn't any worse than the electric chair, that

a high explosive shell could create horrors beyond anything I had seen, and that I had no need to fear the thing.

Effects of the Death Drum on the Mind

BUT it wasn't any use. I guess the vibrations must have affected my brain when I got a touch of them that first day. But I wasn't crazy. I was sane enough in every other way—too sane, perhaps. If I had been mad it might have been easier. During the day it wasn't so bad. I kept my mind busy, you see. I could forget things while studying the language and the customs and beliefs of the tribe. And I taught them a lot of things—showed them how to make pottery, how to set up a loom and weave really good cloth, how to improve their weapons. I even introduced crossbows. If there had been any metallic ores available I would have fixed up a smelter of some sort. But everything was volcanic of course.

I had steel tools—made them out of the machetes and the extra guns and pistols. That was some job, but it helped to kill a lot of time. First I had to make charcoal. Then a forge and bellows. After I had managed to cut a rifle barrel into sections the rest wasn't so hard. It was just a matter of progression. Stone hammer and machete for cutting the heated steel. A light steel hammer, a heavier one, to forge. Cold chisels next. Then other tools. Each one I finished made the next one easier. I even managed a saw—pretty crude but it *would* cut timber, and files of sorts. Knives and spear and arrow heads were easy. And the lock-springs of the guns were transformed into fish hooks. Of course, all this settled all doubts as to my status as a god. And I had another purpose in view. I thought that if I rose high enough in the estimation of the people, and if I provided them with superior weapons and utensils, I might eventually induce them to do away with their Death Drum. But I came near to getting myself into a nasty mess when I suggested that. I hadn't realized or understood it before, but it seemed that the infernal contrivance was sacred. It was more than a fetish. The Xinguays actually believed a special god lived in the thing—a sort of guardian spirit—who came out and destroyed their enemies when they pounded on his home.

I had been so filled with horror of the thing that I hadn't even mentioned it before—much less investigated it or questioned the Xinguays about it. But this new phase of the matter aroused my interest. For the first time I began to realize matters I had overlooked. Why was it that they possessed only one of the beastly things? Why weren't there a lot of them? And how had these savages—who were so primitive in all other ways, invented and constructed the device? But they didn't know the answer any more than I did. The Death-Drum had always been there, they said. They didn't even have any tradition as to who made it or when it was made. Perhaps that's why they regarded it as so sacred—as the abode

of a war-god; thought it was of divine origin, created for their special benefit, you know.

No Traditions About the Death Drum

BUT I'm getting away from my story. Still, all that is important, it all has a bearing on what happened. As I said, I was obsessed with the desire to get away. But I couldn't see how that was possible. It began to seem as if I were fated to remain there among the Xinguays for life. But I couldn't stand the thought of that. Hope was the only thing that kept me up. And I decided that I would have to take the chance of the jungles, the chance of finding my way out or dying in the uninhabited bush. I even began to plan for that. I could carry sixty or seventy pounds of food with me. With care, and by subsisting on anything edible I might find—grubs, snails, lizards—with the birds and game I might get, I should be able to keep going for a month anyway. Clothing didn't matter so much. And the khaki clothes I had worn were still in pretty fair shape for somehow, with some wild idea that I might need them later, I had put them aside soon after the head-hunters' raid and had worn only a breech clout like the Indians. My boots were the big problem.

The Need of Shoes for Traveling

I COULDN'T accustom myself to going barefooted. If I had had any sense, and hadn't been so nauseated and crazed with horror, I would have saved the boots that the other men had been wearing. They hadn't been injured by the vibrations of the Death Drum. But it was too late now. God knows it would have been bad enough to have—well—to have handled and cleaned them at the time. But now—after months—even the thought made me feel faint. But I hadn't been such a fool as to wear out my boots. You see I had always had that thought uppermost in my mind—that some day, somehow, I would get away, and then I'd need my boots and my clothing. So I had made sandals out of bark and a sort of moccasins from the hide of a deer. But my boots had been pretty well worn when I reached the village and I knew they wouldn't last me through a trip out of the Pajonal. And once in the jungle I wouldn't have time to stop to make footgear. I would have to keep going if I expected to make it. So I busied myself making sandals and moccasins, until I had half a dozen pairs. With a rifle and ammunition—I wouldn't need a revolver—and a machete and a knife, I would find a sixty pound load about all I could carry. But the load would grow lighter each day, so I wouldn't have so much to tote when my strength failed or I became tired. The mere physical hardships and perils I would be forced to face didn't worry me much. I had always carried a flint and steel made of those Spanish *mechas*, the inflammable wick with a flint and steel, you know, so I could make fire.

I wasn't afraid of wild beasts or snakes, and as I was in splendid physical shape I wasn't troubled about being taken down with fever or sickness. Of course an accident might happen—I might break a leg or an arm or something—but that was a small chance. The thing that really troubled me was the direction I should take. Of course I knew in a general way where I was. I knew I was in the Gran Pajonal, but that's like a man knowing he's somewhere in the State of Texas or in the middle of the Sahara. I didn't know whether I was nearest the Brazilian, the Ecuadorian, the Colombian or the Peruvian settlements. To be sure, the stream down which we had drifted hadn't been far from the crater—we had walked it in a few hours. But I couldn't recall the direction we had followed. And unless I could rig up some sort of a raft or boat, a river or stream wouldn't help me. In fact it would hinder me, for as you know the jungle is always thickest near a stream. And I couldn't afford to waste time following a roundabout route along a river. I spent hours, days racking my brain, trying to visualize the country as it appears on the maps, trying to calculate the route we had taken, the relative distances to various points. But the more I thought of it the more confused I became, the more hopeless my chances appeared.

Then Fate stepped in and forced my hand.

CHAPTER IV

THE first earthquake came about midnight. It was pretty sharp, but I didn't pay much attention to it. I had gone through a lot of worse 'quakes, and there weren't any buildings to tumble on top of one out there in the jungle. The Xinguays didn't seem to be scared either. At least I didn't hear them shouting or moving about. It was a long time until the second shock came—an hour at least, I should say; but I'm not sure, because I had fallen asleep after the first. The second was terrific, and everyone began yelling and running about. But nothing happened, and pretty soon the village quieted down again. I lay awake, waiting for another shock—there usually are three, you know—and wondering whether it would be worse than the others. But when it came it didn't amount to much—only a tremor. So I decided it was all over and went to sleep.

I was awakened by shouts and a dull, throbbing roar. For a moment I thought it the Death-Drum. But somehow it was different—a duller, deeper, steadier sound. The Indians were rushing about like mad, and I jumped up and ran out, too.

The Eruption of the Volcano

MY first impression was that there was a thick fog—one of those heavy white mists that occur in the early morning in the jungle. Then my eyes began to smart, and I noticed a queer odor—sort of hot and earthy.

The old chief came running to me, jabbering excitedly and gesticulating. He was so excited I couldn't understand what he was trying to say. But he pointed up at the mountain side and then down toward the lake. The vapor was lifting—being blown aside by the breeze—and then I saw. Up on the side of the crater, where the bare cliff showed above the trees, a column of steam was roaring up from the pit where the Xinguays had disposed of the dead head-hunters. It must have been spouting for two hundred feet in the air, and every few moments it would die down a little and then burst up twice as far, carrying masses of stone and rocks with it. I knew what it meant. The old volcano was waking up—those 'quakes had disturbed its sleep—and at any time the whole valley might be blown sky-high carrying us with it. And when I turned to look at the lake I knew we didn't have any time to spare if we were to get away before the eruption took place. That lake was a seething cauldron, a hissing, steaming, roaring crater. And it wasn't water that was boiling up in great bubbles that exploded with the detonations of heavy artillery. Not water but lava—incandescent, molten lava!

I turned to warn the chief to flee, but he had gone. I shouted to the Indians to run for their lives, but they paid no attention, even if they heard me, which I doubt. They were all hurrying toward the Council House, carrying their weapons, the men struggling to put on their masks and leaf cloaks. Poor superstitious fools! Suddenly faced with danger they were turning to the one means of defense. They were trusting to the guardian god to save them; trusting to their Death Drum to destroy this new enemy, this devil who menaced them!

MADLY I dashed to my hut. I seized my rifle, grabbed up my clothes and machete, and raced for the jungle-covered slopes beyond the village. There had been no time to hunt for food; to have attempted to carry any load would have been suicidal. But I never gave that matter a thought. Deadly peril, danger of imminent death, spurred me on. Behind me I could hear the ever increasing thunder of the exploding lava, the roar of the escaping steam, and, through the bedlam of sound, the throbbing, pulsating whining note of the Death-Drum, that even in the face of greater dangers sent chills of horror along my spine.

By merest chance I had chosen the easiest way up the side of the crater, for I had raced blindly in the direction farthest from the ever increasing volcanic activity. But it was hard enough going even at the best, and driven by terror as I was I seemed to barely crawl up the jungle-covered slope. It was like a nightmare—one of those fearful dreams when one strives to rush from some awful peril and finds oneself barely able to move, held back by some invisible force, compelled to drag oneself an inch at a time toward safety.

Hemmmed in by dense forest I could see nothing of what was taking place. But I could hear. The air fairly trembled to the thunder of the volcano's pent-up forces suddenly released. And as the sharp crackle or rifle fire cuts through the roar of cannonading, as the shrill notes of a piccolo are heard through the deep tones of the basso, so through that thunder of sound that shook the earth and caused the very trees to tremble, I could hear the deadly note of the Death-Drum, as the poor, ignorant, helpless savages sought to destroy the devil that threatened them, sublime in their faith that their god would not fail them in their time of greatest need.

Panting, stumbling, I hurried on. Each moment I expected the end of everything. Every instant I expected the bowels of the earth to be torn asunder in one terrific, overwhelming eruption.

But minute after minute passed and still there was no outburst, still I struggled on. At last I gained the summit of the ridge. I was about to rush down the farther side when suddenly I realized the futility of my efforts to save myself from the impending doom. It was as hopeless for me to try to escape from the volcano as for the Xinguays to attempt to still it with their Death-Drum. When the eruption came, everything within miles would be destroyed. I could no more outrun the blasts of gas, the hail of stones and ashes, the molten lava, than the head-hunters I had killed could outrun my bullets.

I would be no safer dashing onward through the jungle than standing on the crater's rim. From far below me came the rumbling roar, the heavy detonations, but they seemed to be decreasing, growing fainter and fainter; and suddenly I was aware that the beat of the Death-Drum was no longer pulsating through the other sounds. I threaded my way between the trees until I could gaze down into the crater. I could scarcely believe my eyes. Not a trace of the place, not a vestige of the village remained.

Covering the whole floor of the crater, extending for a hundred feet or more up the sides of the great bowl, was a vast sheet of milky, steaming, boiling water!

The Disaster—The Effects of the Eruption

THE appalling disaster almost overwhelmed me. I can't explain how I felt, or the sensations that swept over me. And they weren't due to the fact that the Xinguays had been completely wiped out, nor because of the awful death they had met. No, I think it was the sudden realization that I was alone, alone on the crater's rim, a puny, tiny, infinitesimal thing, surrounded by chaos and destruction. All my former terrors of an eruption were forgotten. It didn't seem to matter whether I lived or died. What was one man, one human being to the forces of Nature? Of what importance was I, a mere atom in the scheme of things of the universe? Nothing! No more than an ant, a grain of sand.

Yet, so strong is man's instinct of self-preservation that, unconsciously almost, in the midst of these reflections I found myself hurrying onward, thinking how I might manage to survive. My plight was desperate. For months I had hesitated to attempt to make my way to civilization, fearing to take the chance even when provided with food enough to last me for weeks, with ammunition enough and to spare. Yet here I was without food, with only a few rounds of ammunition, without shoes, alone in the Gran Pajonal, the largest area of unexplored jungle in the world. What I had feared to do Fate had forced upon me. As full realization of my position came to me I was half-minded to give up, to put an end to myself. Then I cursed myself for a coward and a fool. *I would go on.* *I would* fight to the end. If I found myself unable to go farther—starving, facing a certain lingering death—there would still be time enough to put a merciful bullet through my own brain. In the face of what was ahead I forgot what lay behind. I no longer even thought of the eruption. I didn't believe there would be one anyway. Abruptly I remembered that I was almost naked and was still carrying the garments that, instinctively, I had snatched up. I stopped, put on my ragged, patched clothes and again resumed my way through the forest.

That afternoon I shot an agouti. It was the only living creature, other than small birds, that I had seen. Partly sheltered by the outflung root buttresses of a huge mora tree I built a fire, cooked my meat and passed the night. I felt more cheerful, more confident when another day dawned. I might yet pull through, I decided. I might find enough game to keep me going. The agouti would provide food for the day, and if I were lucky enough to kill a deer or some large animal, I could smoke the meat—smoke it over a fire—and live on it for many days.

The Journey to Civilization Begun

I COUNTED my cartridges. I had twenty-two. Even if I shot some creature every other day I had enough ammunition to last me for over a month—that is, if I didn't miss. I would have to be careful, be sure every shot counted. And I would have to keep a sharp lookout for anything edible—nuts, fruits, snakes, lizards, frogs—which would help conserve my ammunition. I decided that unless something went amiss I should be able to survive for nearly two months, and I ought to strike some outpost or some village of semi-civilized Indians in six weeks, if at all.

No use trying to give you a detailed account of my wanderings. It wouldn't interest you, and it isn't important—just the usual thing, the thing you and scores of others have been through. Just the endless jungle, damp, soggy underfoot; endless, giant tree trunks, a dense impenetrable roof of green, a tangle of lianas drooping from the lofty branches; shafts of sunlight here and there; occasional small streams, im-

passable patches of thorn and saw-grass; the notes of invisible birds hundreds of feet above; hour after hour with no sign of life, and a weary, despairing man plodding on and on and on. There's nothing like the jungle to take the self-conceit out of a man, to destroy his inherent superiority complex. I don't think I ever had fully realized it before. I had always been with other men—white men or Indians—and unconsciously one compared oneself with others—and can always find ways in which one is their superior. But alone in the jungle! That's when a man realizes what he really is. Only an atom. I know just how an ant must feel in an acre of corn. And the silence! I had never noticed that before. Not a silence devoid of sound, but a silence made the more obtrusive, the more terrible because of the sounds—the dropping of a nut that makes one jump, the falling of a twig that fairly crashes, the twitter of a bird that seems to pierce one's ear-drums. Lord, how it got on my nerves! Sometimes I had to shout, scream and yell just to break that awful vast silence. And for hour after hour I sung, whistled, talked to myself—anything to hear a steady sound of some sort. Of course that frightened what game there was, so for other hours I had to force myself to be as silent as the jungle creatures. Yet through it all, within my brain I could still hear that accursed Death-Drum beating, beating, *beating!*

Stirling, trembling, wild eyed, he reached for the decanter on the table before us, poured himself a stiff drink and gulped it down. With shaking fingers he filled and lit the pipe I had given him. Presently he continued.

Ten Days in the Pajonal—A River Is Reached

"**I**MUST have been in the Pajonal for ten days when I came to the river," he said. "It flowed toward the west, so I felt I must be on the Pacific water-shed. That would mean I would come out in Peru or Ecuador if I followed down the stream. But of course I couldn't be certain of that. The river might turn and twist in every direction. It might really flow to the east, to the north or to the south. But whatever its course I made up my mind to trust to it. I couldn't stand much more of that jungle tramping. It wasn't a large stream—not much more than a good sized brook, and the current wasn't swift. There might be rapids ahead, but it wasn't mountainous country. I thanked God I had a machete, for without it I never could have made the raft. It wasn't much of a raft at that—just a few sections of the cecropia tree trunks—you know, the ones the Indians use for floating timbers; like gigantic bamboos. Two or three of the pieces lashed together with vines was all I needed. That and a long pole and a sort of crude paddle I hacked out of a piece of a palm tree."

It floated me all right, and you can't imagine what a joy it was—just to stand there and guide the thing, and float along between the banks with no real effort.

I felt as if I had licked the jungle. I laughed at it, shook my fist at the dark forest as I swept onward, cursed it. And there was more game along the stream. The first day I saw a tapir, two deer and an ocelot. I shot one deer, but I let the others alone. I couldn't have carried the tapir even if I had killed him. I didn't want the ocelot, and there wasn't any sense in wasting a shell on a deer I didn't really need.

After the first two or three days I felt sure the stream flowed southwest. It turned and twisted of course; but I kept watch of the sun and found the general direction. I calculated it must flow into the Marañon, but it didn't really matter where it flowed. The main thing was that there would be settlements or Indian villages somewhere along the stream. I never gave a thought to the possibility of running into hostile savages. I was so lonely, so crazy to see another human being, that I would have yelled with delight at sight of a cannibal Amuensha.

You, no one, can imagine what I suffered from loneliness on that trip. It hadn't been so bad even in the jungle. There I had been compelled to keep my mind busy—picking my way, avoiding obstacles, searching for game, but when floating down the river where there was nothing to occupy my mind, the stark horrors of the past weeks kept obtruding themselves. The more I tried to forget them the more vivid they became. I would have given anything—would have sold my soul were such a thing possible—just to have heard the sound of a human voice, just to have had some human being to talk to.

The Meeting with Head-Hunters

IGUESS it was about a week after I had taken to my raft that I met the first Indians. I awoke one morning to find them standing over me. For a moment I thought I was still asleep and dreaming. But they were real enough. They were brown-skinned, had long black hair, wore bands of red and yellow feathers about their heads, had skewers of bone tipped with feathers through their ears and had heavy strings of metallic-green beetles' wings about their necks. Both wore breech cloths of a peculiar reddish-brown cloth with a geometrical design in white. Both carried long paddle-shaped wooden clubs, and both held long-hafted lances. All this I took in at my first glance, but my gaze was focussed upon the spears. They had steel blades! That was the one detail I really saw, for it meant the Indians were in touch with civilization!

I gave a shout and leaped up so suddenly that the Indians sprang back with startled cries and upraised weapons. But they didn't strike, although I couldn't have blamed them if they had, for I must have looked like a wild man or a real devil. But I guess they thought me crazy, for I was so overjoyed, so delirious with delight at seeing men—even savages—and knowing I was done with that lonely awful jungle, that I danced and laughed and shouted like a madman. I

spoke to them in Xinguay, but they didn't understand. I tried them with Putamo but with no better result. I spoke in Quichua and a puzzled frown came over their foreheads as if they were trying to make a mental translation of the words. Then I tried Jivarro. Instantly their faces lit up. They understood that tongue and one of them replied in a Jivarro dialect. I could talk to them.

Of course I knew they were head-hunters. But that didn't worry me in the least. Head hunting isn't just a hit-or-miss game like shooting rabbits. There are certain formalities to be observed in collecting heads. And a head isn't of any value as a trophy unless taken from an enemy slain in battle. Besides, if they had wanted my head they could easily have killed me while I slept. But I don't think it even occurred to me that they were head-hunters—not just then. I was too overjoyed at having the company of human beings to think of anything else or to care. I was so happy that I actually cried. The relief, the reaction was too great for me to control my feelings. Oblivious of their weapons I flung myself upon the Indians, patting their backs, shaking their hands, talking to them as if they had been long-lost brothers.

For a few moments the Jivarros seemed scared—they didn't know whether to turn and run or not. But pretty soon they began to grin and to answer my questions. Then, driving their spears in to the earth, points down as a sign of peace, they squatted down and accepted the smoked venison I offered them. By that time I had calmed down enough to talk sensibly and coherently. But I was awfully disappointed when they told me they had never been to the settlements and didn't know anything about them. But white men *had* been to their village—which was only a few hours' walk from where they had found me—so I knew I could make it. I think that was the happiest day of my life.

The village didn't amount to much—perhaps a dozen houses and about fifty people—and most of the men were away when we arrived. They had gone off on a head-hunting raid, my two friends told me. The Jivarros—or rather the Muyas, for they were not true Jivarros but a sub-tribe—treated me well enough. But I was mad with impatience to be off. The trouble was that none of the men remaining in the village knew the route to the settlements, except their general direction. And I couldn't bear the thought of going alone. I had had all of the solitary jungle travel I could stand. But none of the Indians could go with me without permission of the chief, so I was forced to wait until he came back with his raiders.

How Heads Are Shrunken as Trophies

WHEN the party finally returned they came in triumph with nearly a dozen heads, and for the next few days they were far too busy to bother with me. Did you ever see a shrunken head prepared? No, I thought not. Well, I have. I thought it would

be pretty horrible—although nothing compared to what I'd been through. But it wasn't. Not half as bad as the dissections in a medical school. The Indians don't just chop off the heads. First they make a V-shaped incision in their victim's body, with the point of the V just above the navel, and extending up and over the shoulders and around the neck. Then they peel off the triangular flap of skin until the neck is exposed and sever it neatly between the cervical vertebrae. Then they turn the skin inside out, like stripping off a glove, as far as it will go. Did you ever try your hand at taxidermy—at skinning birds for specimens? I thought so. Then you know how it is when you skin a duck or a wood-pecker—how you have to make a cut through the skin at the back of the head in order to get the skin over the skull. It's the same with a human head. When the skin is off the Indians soak it in a sort of tanning solution made of bark and leaves. That stops the hair from falling out and cures the skin. While it's soaking in this, the head-shrinker collects a lot of round stones of various sizes, and some coarse sand, and places them in a fire. After two or three hours he takes the head from the liquid, lets it drain, through the slit in the back of the scalp and turns the skin right side out.

Then he sews the lips together or skewers them in place with little slivers of palm wood, and taking the largest of the hot stones he drops it into the skin through the neck-opening. Then he keeps moving the head about, turning it this way and that, rolling it back and forth, so that the hot stone comes into contact with all parts of the skin. It steams and smokes and stinks of burned leather, and the head begins to shrink and toughen as it dries. When the first stone cools off the Indian dumps it out and puts in a smaller stone. He keeps this up, using smaller and smaller stones as the head shrinks, and all the time moulding the nose, lips and features to keep their shape.

I had always supposed it was a long process—that it took weeks, months to shrink a head. But it doesn't. The whole process requires only about thirty-six hours, and the head shrinks to its permanent size in a few hours. When it is reduced to the limit of the stones, the hot sand is used, the flap of skin is tied over the neck opening, and the head is hung up in the smoke of a fire to blacken and cure.

There's a lot of ceremony about all this. It has to be done in a special sort of hut at a distance from the village—so the spirits of the heads won't hide in the houses—and the head-shrinkers have to live alone in the medicine-hut and watch the heads until they are finished. There isn't anything very strange or remarkable or mysterious about shrinking heads—I could do it myself and make a better job of it than the Jivarros. Of course you know that they shrink animals' heads also—mostly sloths and monkeys. They believe they are descended from sloths, so when they kill one they shrink its head as a sort of honor—like keeping the head of one's ancestor on the parlor

mantel. Sometimes they even shrink the entire bodies of their enemies. I never could find out just why they do that. It's a big job—and messy—and takes a lot of time and trouble. I think they do it just as a stunt—to show their skill and prove what they can do in the shrinking line.

Appearance of the Shrunken Heads

THEY'RE repulsive-looking things—like the dead bodies of grotesque hairy dwarfs, for of course the hair doesn't shrink and the skin looks actually woolly.

But I saw one trophy that was really beautiful. Don't laugh. It was the head and upper portion of the torso of a young woman. The features had been perfectly preserved. And it hadn't been smoked black like the heads—just a deep rich brown. Looked as if sculptured from some rich dark wood. It was a unique thing—Lord what a specimen for a museum—and I asked about it. The Indians regarded it as a great fetish, for the woman had been a real Amazon, a female warrior, who had led her tribe to battle and had a bigger collection of heads than any chief in the Pajonal.

But I'm getting off the track again. All this is an old story to you. Well, after the head-shrinking ceremonies were over, and the village settled down to a normal existence again, I talked to the chief. He was a crafty rascal and I could see that he wanted my rifle. But he was honest. He could have killed me or had me killed any time, and could have taken my gun and my head at the same time. But he didn't. He wanted to trade for it. And the only thing that I wanted was to get to the settlements, so I promised to give him the rifle if he would send some of his men to guide me out. He was willing to agree to that, but he had had dealings with white men and didn't trust them. He was frank about it, too. Told me he couldn't feel sure I'd stick to my bargain. That after I reached the white men's villages I might not send back the gun, and insisted on having it handed over before I left. Anyway, I decided, I wouldn't need the rifle if I had the Indians with me. There wouldn't be any necessity of my shooting game, and if we should run into hostile Indians shooting would only make matters worse. Besides, I didn't have many cartridges left. I had to smile when I thought of that. After he had used up the ammunition the gun wouldn't be much use to the chief. But he didn't want it to use as a weapon—just as a sort of sceptre or talisman. Well, the upshot of it all was that I agreed. And I thought it the best bargain any man ever made.

I started off with two Indians—the same two who had found me asleep. I thought all my troubles were over, that in ten days or so I would be back among white men. Everything went well for the first two or three days. The Indians carried food—dried meat and fish, manioc meal, corn, and they had an uncanny

knack of finding game. On the fourth day we came to a river. That would carry us to within two days' march of the white men, the Jivarros told me. It was marvelous, the way they made a canoe. Stripped a cylinder of bark from a tree, laced the ends together with vines, forced the sides apart with sticks and our boat was ready.

A Disaster Came—An Attack by Indians

IT was on the third day that disaster came. As we swept around a bend, yells, and savage cries came from the jungle. The Jivarros tried to back water, but it was too late. Before they could grasp their weapons there was a shower of long arrows and spears from the savages on the bank and one of my Indians toppled over with a six-foot arrow through his body. He almost upset the canoe as he fell. But that was what saved me, for I lost my balance and rolled into the bottom of the craft. And I had sense enough to stay there. The other Indian had been hit, but he shouted back defiance and hurled his throwing-spear. An arrow nicked my shoulder, but I knew it wasn't poisoned. The next moment we were out of range. The Jivarro with me was in bad shape. A spear had got him through one side, laying the flesh open to his ribs, and a devilish jagged-headed arrow had buried itself in his thigh. He was getting weaker every minute, and, as soon as I dared, I swung the canoe into the bank on the side opposite to where the Indians^s had been and tried to do something for the fellow. I managed to bind up the wound in his side after a fashion, but it was tough getting that broken arrow-head out of his leg. It meant cutting and cutting deep. But he never winced or groaned while I did it. Then he tried to describe some sort of a vine I was to find and bind onto the wounds. I started out to hunt for it and after a time I found what corresponded to his description. But it had taken me an hour of more and when I got back there wasn't any need for it, for the man was dead.

The Canoe Drifted Away

AND as if this wasn't enough, I found the canoe had gone. In my anxiety to save the Indian I had neglected to pull the craft far enough up the shore, and now it was somewhere down the river with all the provisions in it.

For a time I raved and cursed. I was worse off than ever. I didn't even have a gun. All I had was my machete and my knife, for the Indians' bows and arrows had been in the cayuco.

After a time I calmed down some. I forced myself to think clearly, to look ahead, to face my chances of life and death. The Jivarros had told me that five days on the river would bring us to two days' walk from the settlements. We had already been three days on the river. That meant two days more by boat, and two days afoot, from where I was stranded with

the dead Jivarro for company. I tried to figure out what speed we had been making and decided that six miles an hour would be a fair average, and if a man made two miles an hour walking through the jungle he was doing well. That meant that the nearest outpost of civilization couldn't be much over one hundred miles distant. One hundred miles! Not much of a distance as measured by railways, motor cars, power boats or airplanes, but a terrific distance, an interminable distance to a man alone in an unknown jungle, without food, without firearms and with a wounded shoulder—my entire arm was now aching, swollen and almost useless, but luckily it was my left shoulder that had been hit. I remembered the medicinal leaves I had gathered, and managed to get some of them on the wound and secured in place by rags from my clothing. But it wasn't the wounded arm that troubled me, nor was it so much the question of being able to live somehow. It was the fact that I didn't know the direction in which the settlements lay. Of course I knew the route led down the river valley, but I didn't know where the Indians had planned to leave the stream or what direction they had planned to follow afterward. It was all pure guesswork, and guesswork in the jungle is the next thing to committing suicide.

Last Days of the Escape from the Jungle

BUT it was no use sitting there beside the dead Jivarro. Anything was better than that. First I would see if I couldn't find something with which to make a raft. But there were no bamboos, no balsa trees, not even reeds there. I couldn't make a cayuco the way the Indians had, for with my bad shoulder I couldn't climb a tree. And I doubt if I could have managed it alone under the best of conditions. But I did accomplish one thing. I found some crawfish under the stones in the stream, I found snails, I caught a lizard. All edible, and building a fire I cooked all the things, tied them in a wild plantain leaf, and started on my almost hopeless journey. Day after day I tramped, following the general direction of the stream, for I figured that by walking for six days I would cover very nearly the distance we could have travelled by canoe in two days, and I hoped that when I reached the spot I might find some sort of a trail to the settlements.

There is no sense in boring you with the details of that awful journey. It was terrible, a nightmare. Talk about your "Green Hell!" No man can realize what I went through. When I had had my rifle I had never thought of wild beasts. But now they were added to the other terrors. The jungle seemed to be alive with jaguars, ocelots, pumas. Their tracks were everywhere, and I could hear them howling, snarling about in the black jungle every night. Snakes didn't trouble me. I wanted to find snakes. I welcomed them, for they were food. But snakes were scarce, as usual. Once I stumbled on a guan's nest with half a

dozen eggs. They were nearly ready to hatch, but I wolfed them down chicks and all. I dug grubs from rotten logs, burrowed into ants' nests for the eggs and fat queen-ants. I gathered caterpillars and even slugs. I dug in the earth for worms and searched beneath stones for newts, lizards and toads. Anything that was flesh or alive I ate. I had forgotten there was such a thing as squeamishness. At times I would hear bits of nuts or fruit dropping from the tree tops where parrots and macaws were feasting, and I would crawl about on hands and knees, carefully gathering the fragments and devouring them ravenously. I gnawed at the roots of plants, chewed palmetto shoots, and ate the seeds of plants which I knew were not poisonous. Sometimes I had a feast when I came to a clump of low palms with their bunches of oily, hard berries. But too many of these brought on intense nausea. I found the unrolled fronds of tree-ferns could be eaten, and even hard-shelled giant beetles, when roasted and stripped of their armor, helped to sustain my life.

I think that for several days I must have been quite out of my head, for I can't remember any of the details of my wanderings. Sometimes I thought myself back among the Xinguays and I would run screaming through the jungle trying to get away from the vibrations of the Death-Drum pounding in my brain. At other times I thought I was struggling with Matson and would come to my senses to find myself wrestling with trailing vines that barred my way. I was surrounded with horrors. Terrifying savages sneaked from tree to tree, forever dogging my footsteps. Gigantic jaguars crouched on branches overhead. Enormous serpents lay coiled in my path. Shrieks and banshee-like wails came from invisible monstrous beings. All visions, all the creations of an overwrought brain and a weary, starving body, no doubt, but as terrible, as real to me, as though they were actually there.

The Village of the Friendly Quichas

AND then suddenly, without knowing how or when I got there, without memory of having left the jungle, I found myself in a little Quichua village surrounded by towering bare mountains. I was on a rude couch in a tiny stone hut, and a stolid-faced, scarlet cheeked, unspeakably filthy Indian woman was feeding me some sort of hot broth. But my brain was clear. I knew I was not dreaming, that I was not crazy. And I knew I was out of the jungle, that I had reached the fringes of civilization.

The Quichuas were kind to me. They told me they had found me wandering on a mountainside, where the *montaña*—the jungle of the lowlands—ends and

the Andes begin. I had been in their village three weeks, dead to the world, delirious with fever. They had cared for me as tenderly, as assiduously as though I had been a descendent of the Incas, instead of a half-crazed, wasted wreck of a white man. Abjectly poor, living in that bleak desolate land, subsisting on frozen potatoes and barley, yet the Quichuas had even slaughtered a llama kid to provide me with broth. Christians? Not as we know the word! Sun worshippers, pagans in the eyes of our race; but the best of Christians in heart and deed and in the eyes of God.

When I was strong enough they took me to the nearest station on the railway. For the first time in two years I saw my fellow white men, heard my mother tongue. And they jeered at me, treated me as if I were a pariah! They wouldn't listen to me, wouldn't believe me, wouldn't even give me a passage on a train—not even if I rode on a freight car.

If it hadn't been for the Indians I wouldn't be here now—telling you all this. But the Quichuas went into the market, they went among their tribesmen telling my story and gathering a centavo here, another there, until they had enough to see me on my way. That saves a lot for our superiority, our civilization, our Christianity, doesn't it?

And on the train, when, after all those months of exile in the jungle, all the horrors and sufferings I had undergone, I tried to speak to white people, crazy to talk to some one in my own language, mad for a little human kindness, some show of friendliness, someone to whom I might unburden my mind. I was rebuffed, ignored, avoided as though I had been a leper. Lord, how it hurt! It was as bad as the silent jungle, worse than being among savages—the loneliness of being among my own kind with no one to talk with, no one who would listen, no one to give me a kind glance, a bit of sympathy! And when I got here and went to the consul and he laughed at me—" "

Stirling's head sank to his arms and his emaciated frame shook with convulsive sobs.

I rose and patted his shoulder gently. "All that is over now, old man," I said. "Those morons on the train, those roughnecks at Coya, that ass of a Consul aren't worth considering. I believe you. I believe every word you have told me. And I'll cable to your friends and will see that you have anything and everything you want while you are here. Also, I shall tell that confounded Consul what I think of him. But now, off to the hospital for a good long rest under the doctor's care."

Poor Stirling! In the quiet shelter of the hospital he found the rest so sorely needed by his racked body and tortured nerves. The only rest that could silence that throbbing of the Xinguay Death Drum in his brain—eternal rest.

Martian and Troglodyte

By Neil R. Jones

Author of "Suicide Durkee's Last Ride," "The Return of the Tripeds," etc.

WE are sure that our readers will enjoy this unusual story. The author is well known to our readers and he certainly has the ability to give a vivid and lifelike aspect to his work. It brings together the troglodytes, the old-time cave dwellers of the earth, and the Martians and carries us through several exciting crises.

Illustrated by MOREY

CHAPTER I

The Tiger Charges

THRAG, the cave man, wandered disconsolately through the lush verdure of his prehistoric forest, completely oblivious to the menacing beasts which prowled constantly around him in their ever active quest for materials with which to appease the cry of their hungry stomachs. A bloated, flaming sun shone down upon the humid jungle and plain which teemed with the myriad life of all species. Huge, shadowy forms crept through the luxuriant riot of vegetation, evidencing their presence by occasional thundering bellows. They strode across the ground which was to see two hundred thousand years later the tramping of Rome's legionaires setting forth to conquer the world for the Eternal City. The lesser beasts warily evaded the gigantic reptiles in their predatory forages, slinking discreetly from the paths of these colossal engines of destruction. Even the shaggy cave-bear was reluctantly forced to admit their superiority, and ambled away from the paths of the great beasts, grumbling.

Above the teeming jungle, swarming with its numerous carnivora, large, bulky, forms flapped dismaly on broad wings, circling, soaring and frequently darting downward to seize some luckless animal in serrated jaws to be borne screaming aloft.

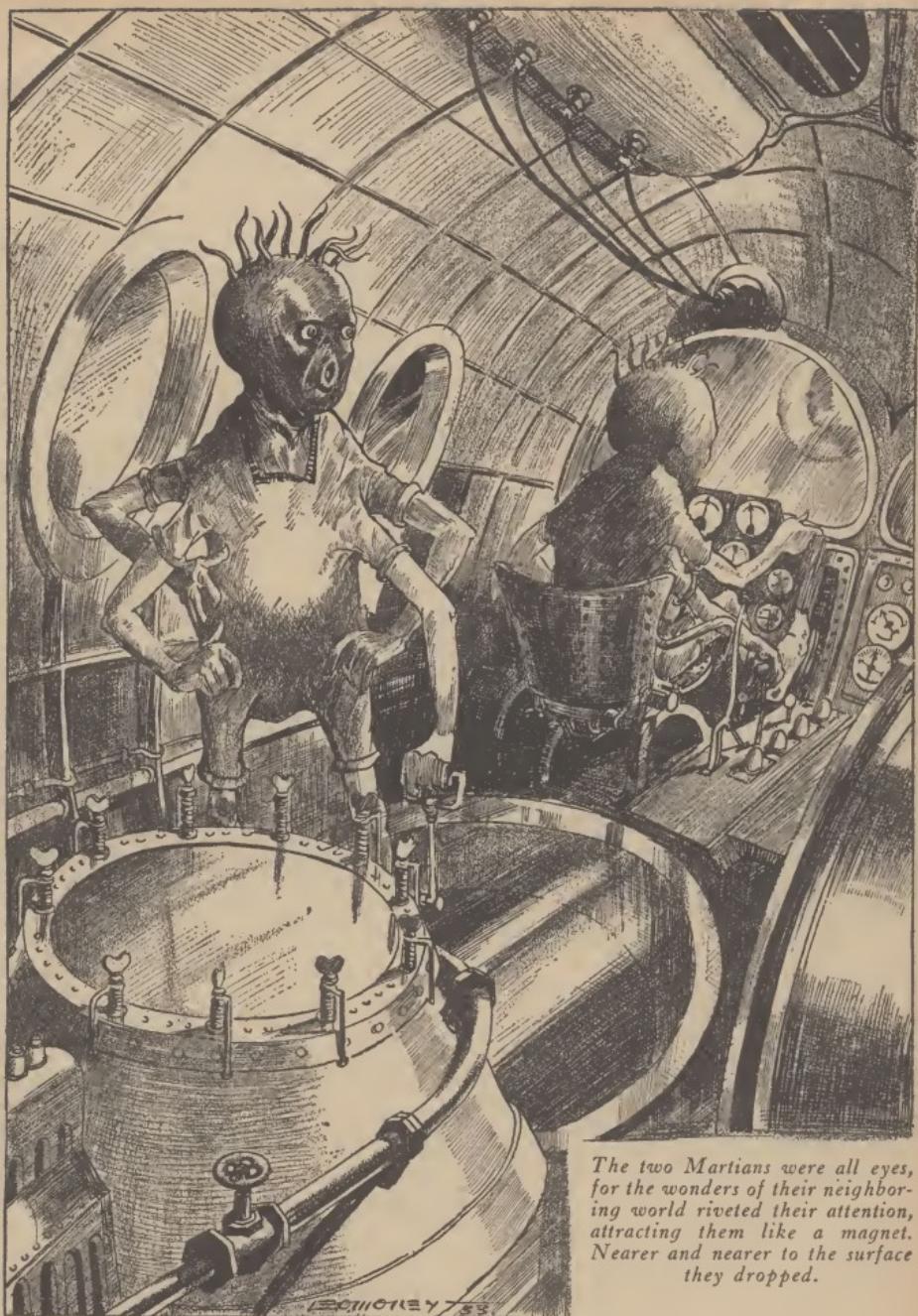
BEHIND Thrag, a pair of yellow, fiery eyes gleamed wickedly, and a long, red tongue licked out hungrily across cruel saber teeth, as they froze in palatable anticipation upon the back of the caveman whose sorrow was of such depth as to render him reckless in his disregard for the possible consequences involved in his unguarded progress through the terrible forest. Great padded feet lifted themselves cautiously as the

big tiger with tail lashing nervously, stalked this prospective feast. Of all meat, the saber-toothed progenitor of our modern tiger preferred the choice tidbit offered by the appetizing carcass of man.

There was, however, a nameless dread connected with this puny, defenceless animal which walked erect, a dread that always held the great striped cat from an immediate seizure of its prey, inducing the animal to stalk it for a considerable distance before charging. Perhaps an inferiority complex subconsciously stimulated in the unreasoning brain of the great cat by the bipeds' more advanced intelligence had something to do with it. Anyway, it was true that the gigantic feline held off longer in seizing the man than if he had been a wild buck or other prey. The cave man proceeded carelessly through the jungle; the great cat softly followed.

Thrag's Brooding, Revengeful Thoughts

THRAG brooded in vengeful, gloomy rumination upon the wicked injustice that had been done him three days previous by the tribe in which he had been born. Nrok who had succeeded the deceased Gwri to chieftainship of the Cliff Dwellers, following the latter's death, had been intensely desirous of Tua, Thrag's mate. In their youth, Tua had chosen Thrag for her lover and had repulsed the advances of the ardent, unwanted Nrok, and since then Nrok's ardor for the unattainable Tua had increased rather than lessened, and there had arisen within his evil mind an intense hatred for Thrag. Nrok had been next in line of succession to the tribal chieftainship, and with the death of Gwri, who had been gored by the tusk of an enraged, hairy mammoth, Nrok had assumed the robes of regal authority, and had lost no time in venting his hate upon the luckless head of Thrag, incidentally placing within his reach the coveted feminine prize, Tua.



The two Martians were all eyes,
for the wonders of their neighbour-
ing world riveted their attention,
attracting them like a magnet.
Nearer and nearer to the surface
they dropped.

THE craft of the villainous Nrok had cunningly devised a plot whereby Thrag was proved disloyal to the tribe with the subsequent result that Thrag was exiled from the Cliff Dwellers, and all his property, including his mate, was confiscated to the general welfare of the tribe. As was to have been expected, Nrok had immediately claimed Tua, increasing his marital retinue to three.

There had been nothing else for Thrag to do but to leave the vicinity of the Cliff Dwellers where his beloved Tua remained under the power of the dominant Nrok. But Thrag had not wandered far.

For the past three days and nights he had courted death amid the innumerable perils of the jungle and plain as he thought to devise some means by which he might possibly recover his Tua and wreak a revenge upon Nrok, his unprincipled arch-enemy. He used but little caution in his traversing of the forest, and his fine senses of sight, hearing and smell were dulled by the morbid retrospection of his mind obsessed with its vital problem. A merciful fate had saved him from danger, guiding his feet from the haunts of the fearsome beasts which roamed both forest and plain, and had protected him from harm.

His reckless bravery, which had characterized his combats with those denizens of the wood, which he had come upon too late to avoid a meeting, had stood him in good stead, and he had yet to succumb beneath the attack of the fearsome creatures. Several long, red, newly healing gashes upon various portions of his body attested to the fact that he had not emerged from the mêlées unscathed.

Once a great snake had encircled his body and the tree crotch in which he slept one night, and he had been forced to literally hack the reptile's head from the body in a reek of blood, before the twisting, squirming, folds of the disgusting animal let loose their hold to fall to the ground. Later that night, Thrag had heard from out of the darkness below his tree, the noise of great jaws crunching the dead body of the snake. There was little, if any, flesh ever left to rot in the steaming jungles of this prehistoric age. Food was the greatest problem among the thriving animal life which roved in superabundant profusion through the plains and forests of this primeval era in the earth's progress, and the larger animals ate the smaller animals who subsisted on the riot of vegetation, the former in turn being preyed upon by still larger meat-eaters. It was a survival of the fittest where nimble feet, quick wits and sharp senses were the greatest assets if longevity were to be cherished.

Thrag had also fallen beneath the rush of a large cave bear, his stone knife drinking deep from the vitals of the fury monster as it pinioned him beneath its great body after he had checked its first advance by a well directed throw of his stone hatchet. Pinned beneath the dying beast from whose terrible claws fate had destined him to be saved, Thrag had found it necessary to cut his way out from under the great body whose massive bulk he had been unable to shove from

off him, even though his mighty thews and muscles were of the strongest among the ranks of the Cliff Dwellers. Then later, a mad dash for a protecting tree had seen him elude by only a hair's breadth the infuriated charge of one of the nearly extinct saurians, a few of which still existed in gradually diminishing numbers. Had Thrag been fully on the alert and unburdened by his sorrow and remorse, he would have heard, seen or smelled these terrifying creatures, and could have discreetly avoided them as was his usual habit.

AND so it was, lost in deep thought and reckless abandon for the life which now held but little for him, he remained unconscious of the fact that through the forest behind him there crept death in the form of a sabre-toothed tiger, the undulating muscles rippling gently beneath the beautiful skin of the cat.

Suddenly, the great feline chose to spring, sneaking out into the opening, with belly to the ground, its yellow-green eyes blazing. It prepared to gather its hind feet for the impetus which would hurl it upon its unsuspecting victim, expanding its lungs for the terrifying scream intended to freeze its quarry into a split second of immobility. But the cave man was not to be taken wholly unawares, and the snapping of a fallen tree-branch beneath the feet of the approaching cat warned him of the impending danger. As the cat sprang with a horrid mauling, Thrag leaped aside like lightning, aiming a vicious blow at the sabre-toothed monster, which rushed by him in the air with outspread claws, converting the terrible animal into a raging ball of fury incarnate, as it threshed about upon the ground for a moment, tearing at the stone knife which protruded from its side. Angry screams and howls set the air to ringing with the terrible cries of the enraged cat.

To live was to act, and Thrag had leaped close in to the infuriated animal at the moment it landed, crashing his stone axe down upon the head of the striped terror with all the force of his powerful arm. He would have been instantaneously snuffed out of existence by a chance sweep of the creature's mighty paws. As the body of the cat stiffened from the effects of the numbing, crushing blow, the cave man leaped in and made death doubly assured for the great feline, who had sought his life. Pulling forth his stone knife from the body of the dying animal he plunged it again and again through the sleek fur which covered the heart of his sabre-toothed adversary.

Thrag continued onward, and now took notice that the sun was beginning to sink as a dull red ball down beneath the horizon. To travel by day was fully hazardous enough, but to wander among the numerous prowling horrors by night was a wanton invitation of suicide. The cave man, for the past three nights, had slept in tree crotches, but such a repose was not only uncomfortable but dangerous as well, and his encounter with the snake had not increased his preference for such an aerial bed-chamber. Only that morning, he had

perceived a lonely cave far up on the cliff-side, and upon investigation had found it uninhabited and suitable to his needs. So with the approach of evening tide, the shadow of dusk's twilight mantle enshrouding the landscape, Thrag turned his steps in the direction of the cliff to seek rest until on the morrow the sun's flaming, incandescent mass should rise once more above the horizon, throwing into elongated relief the early morning shadows.

As the cave-man reached the foot of the towering declivity and began his nimble ascent of the nearly sheer face of the precipice towards a dark cave's mouth just below the summit, the dying glow of sunset spread its golden effulgence across the western sky. The evening star appeared from out a blue, twilight sky to look down upon the wild, untamed life of the prehistoric forest. Up, ever upward, Thrag, the cave man, quickly ascended, scaling the high cliff in almost no time, his well proportioned body disappearing within the cave's mouth.

Night passed, and Thrag slept soundly while a gibbous moon sailed majestically across the night sky, its silver surface suffusing the earth with a pale, ghostly, ethereal light. Up from the jungle arose roars, screams, coughs and a variety of other unclassified noises as the great beasts roamed in search of food. Fierce conflicts took place, and while the victor hungrily devoured the still warm remains of his late adversary, he was likely to be attacked and slain by a more fearsome creature who would then greedily bolt both carcasses. Life was cheap, and death a common occurrence.

CHAPTER II

Aboard the Space Ship

WHEN Thrag awoke, the morning sun cast a rosy glow within the interior of his cave. He stretched and yawned, flexing his long-cramped muscles in the revelry of early morning exuberance. He yawned again, and then arose to his feet and walked to the mouth of his cave. From this eminence, he could gaze far away into the blue haze of distance. Below him, the tangled mass of the jungle crept up to the foot of the cliff, while far away beyond it, the dotted plain dwindled away into the horizon. Just within his limits of vision, merging into the sky, there lay the distant sea whose waters teemed, literally alive with the superabundance of marine life which flourished beneath the hot, swollen sun. The remote waters of the sea reflected the early morning sunshine, the burnished surface of the water throwing back a dazzling flicker as the warm breeze excited into movement the rippling waves and white caps.

Thrag was hungry. Very good, then he would eat. But first he must hunt. He gathered up his two weapons, the stone knife and stone axe, without which he would have felt comparatively helpless, the latter weapon being bound to its handle by raw hide thongs. Rapidly, he began his descent of the cliff face, and,

when but halfway down, he discovered a ledge which ran out of sight around a bend of the rocky wall. Being of a curious, exploring nature, Thrag wondered where it led. Perhaps he should find a cave at the other end, a much better one than that in which he had spent the night. Anyway his curiosity was piqued, and he would investigate, so he hopped nimbly down upon the ledge from where he was clinging to a jutting outcrop of rock, and proceeded to follow it along the cliff's face.

It led onward for a considerable distance, and as he continued, Thrag noticed that the cliff was becoming more nearly perpendicular, and its sheerness entirely devoid of irregularities, and he observed that if he were to climb either up or down, it would be necessary to return to the spot where he had gained access to the ledge. Finally the ledge ended abruptly, narrowing off to join the smooth face of the cliff.

Following the Ledge—The Attack by the Bear

There was no cave, and having satisfied his curiosity Thrag turned and retraced his steps. He halted suddenly as a terrifying roar shook the air with its vibrations. Ahead of him, barring him from further progress, stood a great, shaggy cave-bear which glared at him menacingly, with the ugly, yellow fangs showing, and snarling at the puny man who stood before his towering bulk. The bear was hunting his breakfast, and was exceedingly hungry in view of the fact that it had been nearly twenty-four hours since food had passed his ravenous maw. He was in ill humor. Then Thrag had dropped down upon the ledge, the animal had been just around the bend in the direction opposite to that taken by the man, and hearing the troglodyte, had stalked him, the man unaware of the beast's presence until he had turned to go back.

THE cave bear roared angrily once more and, rear-ing upon his hind legs with massive paws upraised to rush down upon the man, prepared to make his kill and fill his stomach. Behind Thrag, the ledge ended against the cliff's face; above and below him there extended the smooth surfaces of the declivity; while before him stood a hungry, infuriated engine of destruction, bent on annihilating him without further delay. Resolutely, the cave man gripped his axe securely, while he loosed the long stone knife from his girdle, awaiting the charge of the cave bear. With a series of frightful roars, the animal charged down upon the primitive man, who with all his might hurled the heavy stone axe at the head of the approaching monster, who roared horribly in pain as the weapon struck his shoulder. A glancing blow, the hatchet ricochetting across the side of the cliff, bounding over the ledge to the forest below.

As the troglodyte struck a savage blow at the huge animal with his stone knife, a terrible sweep of the creature's paw sent it spinning from the hand of the cave man completely disarming him and leaving him

to the mercy of the beast. The man leaped briskly out of the way, and ran to the termination of the narrow ledge, the bear, after his first rush, advancing more slowly but none the less surely. Desperately, the man sought a handhold or foothold which would allow him an escape from the dreadful beast, but the bare walls of the precipice extending both upward and downward mocked him. He was trapped!

Should he leap to death from the ledge in preference to the crushing jaws and tearing talons of the cave bear, or should he die at the attack of the great animal and be devoured? In the last few seconds remaining to his earthly existence the brave troglodyte wondered vaguely which was the more terrible death. A huge, shadowy form drifted down through the air toward the ledge, Thrag catching an elusive glimpse of it out of the tail of his eye, as his gaze rested in rapt fascination upon the cave bear who was preparing for the final charge. One of the flying reptiles, mused Thrag. Doubtless the great pterodactyl and the shaggy cave bear would battle over his carcass. As the bear raised himself for the last rush, the cave man froze up close to the face of the cliff at the very end of the ledge.

* * * *

IN the depths of space between the earth and its contemporary planet, known to present day man as Mars, a small space ship sped at an inconceivable speed across the millions of miles of space towards the earth. It was now very close, having been upon its journey through the stellar void for the period of time in which it had taken the great globe it was approaching to turn upon its axis forty times. Forty times the topographical features of the planet earth had swung lazily before the eager eyes of the two space navigators within their interstellar craft as day by day, according to the rotation of the cosmic sphere, the planet grew larger in proportion as they drew near.

The Martians Appear on the Scene

THE two Martians were six feet in height with large heads, and six limbs, two of the latter being used for locomotion while the other four ranged *midway* of the body were used as arms and hands. Lidless eyes and a pair of holes for nostrils set between the eyes and circular mouth marked the creatures' brown faces, while instead of a growth of hair, there arose from their heads some eight of ten short, waving tentacles which possessed the faculty of distinguishing sound, the heads of inhabitants of the red planet being entirely devoid of ears.

"We are nearly there, Sendalk!" spoke one of them, looking dramatically through the transparent side of the space ship towards the huge world which lay before them. "Our great adventure is before us!"

"It has already been a great adventure, Drigab," replied the other. "For countless years, our people have dreamed of flying through space, and now you and I, the first space navigators, have realized that ambition."

"I wonder what we shall find? Will there be men like us?"

"Possibly."

"But not probably."

"We shall find all kinds of queer life upon the planet Wrooad, for our scientists claim that conditions there are such as would facilitate and encourage life to a large extent. It is nearer the sun, and has a dense atmosphere."

"Which is much unlike our own planet Nime," remarked Drigab.

"We shall have to be prepared to fight fearsome beasts I feel sure," prophesied Sendalk.

"There is no worry on that score. We are prepared."

"Yes."

"What have you decided to do in regard to Dracom, the revolving moon of Wrooad?" queried Drigab, a moment later. "Shall we land on that first, or wait until we have visited Wrooad?"

"We were to land upon the one nearest Nime for convenience of time if you remember our intentions when we embarked. Dracom is now nearer for the time of our arrival and we shall visit that first."

"Its diameter is but half of that of Nime."

"While Nime's diameter is but half of that of Wrooad."

"Which means that we shall be much lighter upon the satellite than upon our planet Nime, and much heavier upon the planet Wrooad."

"Our gravity nullifiers will take care of us while we walk on Wrooad, and the intensifiers will be used on its moon."

"I hope we make a good landing," observed Drigab, a worried look creasing his brow.

"There is nothing to fear," assured Sendalk. "Didn't our three trial expeditions to the two moons* of our own planet prove our craft's spaceworthiness?"

"Yes," admitted Drigab. "But Wrooad is so much larger."

"That matters nothing," replied Sendalk. "If this expedition is a success, we shall fly across space to the little worlds clustered together the other side of Nime, and then on to the giant planet of Vuge."

"We are not yet back from our trip to Wrooad," reminded Drigab. "I should like to visit the next planet nearer the sun rather than risk being drawn down by the gigantic world of Vuge."

"You mean Stiea?" asked Sendalk.

"Yes."

"We shall visit that too, but not on this trip. It is continually covered by clouds, even more so than Wrooad."

"Then there is the tiny inner planet next the sun."

"Which is too hot to approach."

"And then too, we might be drawn into the sun."

CHAPTER III

From Moon to Earth

THE ship of the cosmic void kept on through the eternal blackness of space studied with its galaxy of scintillating stars, and headed for the

* Phobos and Demos are the two moons of the planet Mars.

huge moon whose shining crescent loomed up before them. Several hours later they carefully lowered their interplanetary flyer upon the surface of Wroaad's satellite.

"It has a very thin atmosphere," remarked Sendalk.

"Which in the course of thousands of years from now will waste completely away," added Drigab, "leaving it a cold, dead, lifeless moon."

"I wonder if it is not lifeless now," ruminated Sendalk. "There appears to be scarcely enough air for any living animal to breathe."

"A very low type of vegetation seems to flourish, and it is a universal axiom generally accepted by our scientists that plant life and animal life do not thrive separately," reminded Drigab. "Shall we emerge from our flyer?"

"Yes, we may as well," answered Sendalk, "but we shall don our space suits, for this air is much too rare for our lungs."

Eager to explore the satellite's dismal surface, the two Martians put on their space suits and helmets, and after adjusting their gravity intensifiers, left the cosmic flyer by means of the air lock, stepping forth upon the lonesome appearing Dracom

Landing and Walking on the Moon— Its Animal Life

HOW weird it is," observed Sendalk in awe, waving his four arms at the sky. "You can see the sun and a few of the stars both at the same time."

"Somehow or other, it all looks sadly beautiful," said Drigab. "But I certainly wouldn't want to live here. It is rather depressing."

Together, the two climbed a rise toward a crater hole whose outer slope loomed above them.

"We must not go very far away from the space ship," warned Drigab. "I feel as if there were many eyes watching us from hidden places."

"We'll not go out of sight of it," said Sendalk.

LOOK!" ejaculated Drigab excitedly as the two topped the rise which marked the rim of the moon crater.

From out of the moon pit there arose four thin, fuzzy animals on wings. They were the strangest creatures the Martians had ever seen, representing a cross between a bird and a land animal, the long, scraggly, blue-furred body being equipped with a set of long wings for flight as well as four appendages for walking. The four moon birds arose above the crater, their wings flapping dismally as they viewed these intruders from out of space. The Martians stared in surprise at these inhabitants of the satellite they knew as Dracom. The winged creatures emitted long, shriek-wails as they circled over the place, watching the two Martians who stood silent upon the lip of the lunar crater.

"Shall I bring one of them down?" asked Drigab, raising the weapon he held.

"No," replied Sendalk. "We have come in peace,

and our destroying light-thrower is to be used only as defense."

"I don't like the way they watch us so closely and screech at us," said Drigab disgustedly.

"Come," said Sendalk. "We shall pay them no attention and continue upon our exploration."

The two Martians spent a full day upon Dracom, exploring the satellite of Wroaad which careened nearly a quarter of a million miles off in space. The two visitors from another world visited various sections of the satellite in the space ship, and everywhere they went there grew the sparse vegetation of the dying satellite, and they were greeted by the weird shriekings of the bird folk. One type of animal, and one type of plant life was all that existed upon the moon which thousands of years ago had seen a better life.

"All worlds come to this sooner or later," remarked Sendalk cryptically. "They must all die, even Nime."

"The larger the world, the longer they last, because a small world cools faster," said Drigab. "That is why this moon shall die out long before its mother planet begins to lose its heat to any great extent."

"Dracom cannot last much longer," said Sendalk as the two entered the space craft to bid the moon farewell and continue to the planet around which it swung. "It has very little water left—and that can be found only in the deepest craters."

ACROSS the far flung boundaries of space the two Martians flew in their cosmic flyer, from the moon to the earth. Soon they were hovering above the envelope of atmosphere surrounding the globe, ready for the descent to the surface of the great planet, Wroaad.

"Its color characteristic appears to be green," said Drigab.

"The vegetation," remarked Sendalk.

"Shall we find intelligent creatures?"

"I doubt it."

"Why?"

"Because Wroaad is larger than Nime and took longer to cool after being hurled out of the sun. We are a couple of hundred thousand years in advance of them."

Down through the atmosphere towards the rapidly approaching planet, which rose up to meet them, the two Martians skilfully guided their space ship.

"What strange trees!" ejaculated Sendalk in surprise.

"And animals!" added Drigab, pointing excitedly to the tiny moving dots below them.

The two Martians were all eyes, for the wonders of their neighboring world riveted their attention, attracting them like a magnet. Nearer and nearer to the surface they dropped, and now they could perceive the details of the landscape and view more closely the teeming life of the world.

"Shall we land here?" asked Drigab.

"This place looks as good as any, though we shall have to be on our guard against the beasts. Some of

them appear very formidable. The ray will keep them off."

"Just the same we must not leave the space ship too long while we are exploring. Some of those ponderous creatures are as large as the ship itself, and can damage the outer equipment of our craft."

AS the flyer of space settled towards the ground, Sendalk pointed with excited gesticulations towards a nearby cliff. Drigab followed his pointing arm.

"A creature like us!"

"No!"

"Yes!"

"He walks erect on two legs, but he has only two arms instead of four!"

"But his head somewhat resembles ours!"

"A beast is after him! See him run!"

"He is caught; he can go no farther!"

"We must save him!" exclaimed Drigab. "Quick! Shoot the ray upon the beast before it is too late!"

As the gigantic cave bear rushed down upon Thrag, its hideous roar rattling in his ear drums, there shot forth from the flying monster of the air a blinding ray of white light full upon the fearsome beast which, unable to halt its mad rush, plunged against the rocky wall beside the cave man, dead. The bird had killed the bear, thought Thrag, and now it was to carry him off. How he wished he still had his stone axe and knife. Approaching the inert mass of the cave bear, he watched the great bird.

How queer it behaved; never had he seen such a bird which could remain stationary so long in one spot. The flying colossus had no wings, and its body glinted strangely, reflecting the dazzling beams of sunlight. Where was the head with the grinning jaws and cavernous mouth ready to seize him? He had never seen such a strange animal, and was sorely puzzled. Why didn't it attack him instead of halting motionless in the air to regard him so steadily?

FROM the space flyer, the two Martians looked the troglodyte over carefully, examining his strange body which bore such a distinct similarity to their own.

Seeing that the great bird made no move to attack him, apparently being no longer in the mood for battle after having so easily disposed of the cave bear, and without weapons, Thrag decided to attempt an escape. Slowly and warily he climbed over the carcass of his late adversary, keeping one eye upon the bird who continued to remain passive at this initial maneuver on the man's part. He crept along the ledge away from the creature of the air, and hastily beat a retreat. Thrag did not stop running until he was out of sight around the bend in the cliff where he had first gained access to the ledge, and from here he speedily descended to the foot of the towering precipice.

It was now that a human characteristic laid hold of Thrag. He was suddenly consumed with a curiosity to see what the strange bird would do. Never before

had he seen such a wingless, headless denizen of the atmosphere which instantly killed its foes at a distance with a long, white arm, which shot out like lightning and then disappeared. Thrag did not consider for a moment that the thing had purposely saved his life. All creatures killed either for food, for sport, or for self defense. The creature had not eaten him or the bear, nor had it killed the bear because it feared the animal. Then it must have killed the shaggy beast for sport. If so, why had it not killed him?

The Martians Have Killed the Bear

THESSE were some of the thoughts which raced through the mind of the primitive man as he gained the protection of the forest. Rapidly, he proceeded back along the foot of the cliff to a position relative to the one where above on the ledge the cave bear had nearly terminated his wild life. Eagerly he sought a glimpse of the queer bird. It had flown. But no, there it drifted a short distance away from the spot where he had last seen it. The creature dropped slowly toward the ground in vertical descent.

Thrag, the cave man, now hunted for his weapons, and though he found the knife, the hatchet was irreversibly lost, and he wasted little time seeking it. He wanted to watch the bird. Stealing softly in the direction of the Martian space ship, he saw where it had come down in a clearing. Climbing a tree so that he might give his undivided attention to the great thing, instead of warily avoiding the carnivora of the jungle, he glued his eyes upon the gigantic bird which flew without moving wings.

His eyes opened widely, and he nearly fell off the tree limb in amazement as he saw a part of the great bird open outward. The mouth, he surmised. If he had been surprised at the appearance of the opening, he was more astounded by what now took place.

FROM the mouth of the bird projected the head and shoulders of a man. But was it a man? Thrag gazed in awe at the brown countenanced Martian with his short tentacles growing upon the head where hair should have been. As the entire body of the space wanderer emerged from the cosmic flyer, Thrag's eyes went wide in amazement at the weird appearance of the physique of Sendalk with his four arms. How formidable those men must be, thought Thrag, for they could wield two stone axes and two knives at the same time. That he was some kind of a man Thrag felt certain, but never in all the annals of the tribe had anyone ever heard of, or seen, such a strange race as this man represented. Of course, there were the hairy ape people who lived in the trees, but they bore no resemblance to this individual.

Did this queer man live in the stomach of the great bird? Where had it come from? Some subconscious intuition told the cave man that the bird was not of the flesh and blood variety with which he was familiar, but was a wonderful contrivance owned by the man who had stepped from out of it. A second head now

appeared from the space ship and uttered a few sounds to the first who answered, and then the second head disappeared back within the interstellar craft.

CHAPTER IV

Thrag to the Rescue

SENDALK the Martian, in view of the fact that the earth's dense atmosphere did not threaten him with asphyxiation like that of the moon, had emerged from the space flyer without the surface suit he had worn on the satellite of the planet. He now walked several hundred feet from the space ship, where he stopped and performed, what was to the eyes of the watching cave man, queer antics. He commenced staggering and weaving with a sickening lurch, and then he was down upon his knees, apparently unable to rise, clawing at the greensward with a despairing yell. He arose to his feet, and then toppled over, just as the second Martian emerged from the space flyer and started in the direction of his companion. The second Martian was no more than halfway there before he too lurched forward and stumbled. Instead of keeping on in the direction of Sendalk, Drigab discreetly turned back toward the cosmic flyer from Mars, and half stumbling and running, his four arms swinging ludicrously, he made his uncertain way back to the aerial monster which had so piqued Thrag's curiosity. The last few feet saw Drigab crawling upon his hands and knees, and it was with a great effort that he gained the interior of the interplanetary craft, slamming the door behind him.

The inert body of Sendalk still lay *face up* on the ground. What had happened, wondered Thrag? Why had the two strange creatures behaved so queerly?

Why didn't the first one arise?

The truth of the matter was this: the Martians had been overcome by barometric pressure and oxygen intoxication, the envelope of earth's atmosphere being thicker and denser than that of Mars to which the two explorers from another planet had been accustomed. Sendalk, upon leaving the flyer, had not noticed the difference at first until he was so far away from the space craft that it was impossible to get back, and his senses had reeled. He had yelled to Drigab just before consciousness left him, and Drigab, realizing his plight, had made a desperate effort to rescue him. When halfway to his stricken companion, Drigab experienced the first dangerous sensations which had overcome Sendalk, making him dizzy and uncertain of his footing.

The Martian knew that he would never make it to his fallen comrade and back to the space flyer, let alone considering the added burden of Sendalk's helpless body. He knew that if they were both overcome, death would claim them in this strange world, and he had run back to the space flyer just as fast as he could go, planning to maneuver the craft alongside of Sendalk and rescue him. He had arrived at the space flyer not one moment too soon, for as the door clanged shut behind him, he fell unconscious to the floor of the craft

where he lay for nearly ten minutes before he came to his senses.

THRAZ was an interested spectator to the scene, his sharp eyes taking in every detail of the strange drama enacted before him. And as he watched, so watched other eyes, evil eyes which glared hungrily at the helpless body of Sendalk. With grinning jaws, a long, slim body on short legs wriggled along the ground towards the unconscious Martian. The reptile would make short work of this strange creature that came out of the great bird, soliloquized Thrag as he watched with interest from his tree branch.

The disgusting monster, its glassy eyes staring in glutinous anticipation at the prospective feast before it, continued an ominous approach, the cavernous throat revealed as the great jaws flexed themselves in preparation. Something stabbed at Thrag's heart suddenly, and he felt that he must not let the terrible reptile eat the strange creature. Why should he feel so? Was not the unconscious man from the space ship just as much his enemy as another member of a neighboring tribe, or another animal? Didn't he always gloat over the destruction of an enemy? As the reptile crept slowly upon the helpless man, Thrag's mind became more and more troubled, and his conscience screamed at his adverse nature and instincts to save the Martian from death.

As the cave man impulsively obeyed the overwhelming urgings of his conscience, descending quickly to the ground across which he raced in an attempt to beat the horny skinned reptile to his prospective meal he realized what had prompted his desire to save the weird creature from the air monster. It had occurred to him that the two queer men in the great bird had but recently saved him from the cave bear.

The Cave Dweller Kills a Great Reptile

THE eyes of the reptile gleamed wickedly as he viewed the approaching interruption in the form of the primitive man who rushed down upon him with gleaming knife held aloft. The morning rays of the sun gleamed from the polished cavities where the stone blade had been chipped. The reptile, now standing above the unconscious Sendalk, aimed a vicious snap at the caveman who eluded the terrible jaws numbly and buried his stone knife in a low, upward swing against the belly of the animal which leaped and threshed about as the life blood gushed forth from the ragged puncture inflicted upon him by the indomitable Thrag. Fortune favored the cave man.

Again and again the primeval man leaped in and struck at the horrid creature whose snapping jaws were always a bit too late to close upon some portion of the cave man's anatomy. The reptile finally became too weak to fight and keeled over dead, though its tail still switched to and fro. Picking up the still form of Sendalk, Thrag bore it in the direction of the huge bird into which the other weird, man-like creature had disappeared.

The noise of conflict had attracted other animals of the jungle and they had watched curiously from hidden vantage points the fight between the cave man and the reptile, remaining silent observers with the exception of the little monkeys who danced, chattered, scolded and clapped their hands gleefully from nearby trees. And now from the surrounding foliage of the clearing, there broke into view a towering colossus whose wicked eyes were directed upon the comparatively tiny cave man with his burden which he was transporting to the space flyer.

With a crashing of trees and brush foliage, a great dinosaur, a creature of an earlier age whose ranks were becoming fewer and fewer, strode out of the forest and ambled awkwardly, though swiftly, down upon the troglodyte. Thrag, glancing over his shoulder at the sound of the din and commotion of the creature's sudden break through the jungle, perceived the huge saurian in pursuit of him, and in his heart he felt a sinking sensation, and he broke into a run, for behind him was the most terrible animal in all the world, a creature which had never yet been slain in combat by a human individual!

THRAZ sprinted on toward the huge bird which loomed up closer, while behind him, shaking the ground with its rapid advance, the gigantic saurian, a fearful engine of destructive forces, was speedily closing up the distance between them. The serrated jaws at the extremity of the long neck were spread wide in advance of the rest of the body, ready to seize him. The caveman neared the spaceship, and the dinosaur was scarcely ten feet from the pursued, when from the Martian space flyer there burst forth long shaft of intense light full upon the great saurian. Without a sound, the hitherto invincible giant of an earlier age crashed to the earth a few feet behind the fleeing cave man. Once again the terrible weapon of the Martians had sent death instantaneously to one of the fearsome beasts of earth's prehistoric era. Drigab had come to his senses just in time to witness the termination of Thrag's fight with the reptile in defense of Sendalk. He had prepared to move the space flyer to a position beside the cave man and Sendalk when the troglodyte had picked up the senseless Martian and had borne him in the direction of the space craft. Then the dinosaur had pursued them, and Drigab had turned the destroying ray full upon the terrible monster.

The Cave Dweller Enters the Space Ship

NOW, Drigab opened the door in the space craft and took from the arms of the cave man the unconscious Sendalk. He motioned for Thrag to follow, and beckoned the cave man to enter the huge bird. Fearfully the troglodyte gazed into the hollow interior of the craft at the maze of machinery and intricate apparatus, and it was with hesitance and trepidation that he finally entered. But he clutched his bloody stone knife tightly, and slid inside with suspicious mien, gazing in awe at the fittings of the craft while his heart beat at a wild

excited pace never before preceded in his combats with the carnivora of the prehistoric jungle and plain.

Drigab motioned him kindly to a seat, while he propped Sendalk in another. The Martian and troglodyte each examined one another carefully, Drigab noticing the varying peculiarities of the cave man's body, while Thrag regarded the Martian with a superstitious reverence.

Sendalk began to revive presently, and sat up straight, rubbing a hand across his forehead. To Thrag's ears there came a rapid jargon of unintelligible talk as Drigab explained to Sendalk how Thrag had saved the former's life.

The cave man began to pant and breathe forcibly as if after a long, exhausting run, and a weakness assailed him. Drigab gazed in sudden alarm at the cave man's actions and with sudden understanding reached for a lever.

"He can't stand our thin atmosphere any more than we can breathe his dense air," said Sendalk as Drigab pulled a lever which increased the air within the space craft to a quantity which would average between that of the earth and Mars, creating an atmosphere which could be breathed for a limited time by both Martian and troglodyte without either suffering from any ill effects.

"He is the one we saw upon the face of the cliff," said Drigab. "The creature is built much like us."

"He is a bit lower in the scale of evolution, however," replied Sendalk, "but time will remedy that just as it did for our ancient forebears on the planet Nime."

"He is a brave man," remarked Drigab. "You should have seen him defeat the terrible animal who was about to devour you."

"We must repay him," replied Sendalk. "I wonder if he is speechless."

"Try him out," suggested Drigab.

AFTER a few words in his own language with the supplement of various gesticulations, Sendalk pointed to himself, saying his name after which he pointed to Drigab and pronounced his name. He then pointed to the cave man in query, and the troglodyte, understanding, spoke his own name.

"Thrag!" he ejaculated, pointing to himself.

"He can talk!" exclaimed Sendalk, pleased with his efforts.

Trying to Talk with Each Other

THE cave man, enthused with the efforts of the two Martians to make him talk, followed up this initial speech with a guttural jabbering of sound, pointing to the ceiling of the craft as well as to the various controls, and then at the dead saurian which lay outside the space craft.

"Don't leave him in here too long," warned Drigab. "The atmosphere isn't of enough density for him, and is too dense for us."

"Let him out, and we'll go out with him."

"With our suits and helmets this time."

"Yes, I didn't realize the effects too much atmosphere would have upon us, and thought only of putting on our gravity nullifiers.

CHAPTER V

The "Kill Stick"

IT took the Martians but little time to don their protective suits, and emerge with the caveman into the open. They went to where the enormous carcass of the saurian lay. Each of the Martians carried a long stick in his hand. They were examining the huge beast when a cry from the cave man aroused them.

A Menacing Sabre-Toothed Tiger

THRAg pointed to a snarling sabre-toothed tiger which, attracted by the odor of fresh killed meat had just arrived upon the scene. The cave man gripped his stone knife closely and gesticulated to the Martians to seek safety in their ship of space. On came the terrible creature, snarling and screaming at the three who stood their ground. Only the day before Thrag had killed one of the beasts, and now as he started forward to meet the huge cat in mortal combat, realizing they had tarried too long to run in safety from the feline, Drigab laid a restraining hand upon his arm.

Sendalk raised the long rod he held and levelled it at the approaching sabre-tooth. From the magic rod, Thrag witnessed the same shaft of white light which had previously killed the cave bear and then the mammoth saurian. The effects upon the great striped cat was remarkable. A puzzled look appeared on the cat's face, replacing the wrinkled visage designed to strike terror to all observers, and without a cry the sabre-toothed terror fell dead. How wonderful it was, thought Thrag, to kill so easily. For several hours, the two Martians roamed among the terrible dangers of the forest with the troglodyte, and whenever any animal menaced their safety, he fell dead before the terrible rays of the two explorers from another world. They even taught Thrag how to operate the long sticks, and it was with immeasurable pride that Thrag brought down both a hairy mammoth and a prehistoric ox.

From the latter, Thrag cut a generous portion, offering the food to the Martians who were puzzled at this procedure, until seeing that the cave man ate it, knew it to be food. They declined to eat the raw flesh, however, leaving Thrag to wonder whether or not these two ever found it necessary to feed their stomachs.

After several hours of wandering in the near by vicinity of the space flyer, the Martians tired of the sport and with the cave-man, who had spent an interesting period of time in their company, turned to the cosmic penetrator of the void between worlds.

Here, they offered to Thrag many wonderful articles and trinkets, but the cave man, though regarding them as marvelous, had different ideas, and had a particular motive in mind as he pointed at one of the "kill sticks,"

the name with which he had come to dub the ray ejectors.

"He wants one of the weapons," said Drigab to Sendalk. "Shall we give him one?"

"Yes, if you think it is safe to do so," replied Sendalk. "We have several more of them with us."

So it happened that the two Martians made a gift of one of the ray ejectors to Thrag, the cave man, the representative precursor of modern civilization by two hundred thousand years.

The Cave Man's New Weapon

THE cave-man had a particular reason for desiring the weapon. The sight of all the wild beasts falling before the invincible ray of light made to shine by merely squeezing a button had stimulated in his mind the vision of Nrok and his followers dropping to their death before that same ray, while undaunted he continued on to claim his beloved Tua. What a sweeping conquest, revenge and recovery of a lost love, he could bring within his power with the possession of the "kill stick!"

And so it was a delighted Thrag who hurried away from the space ship with his newly acquired toy and weapon to consummate the highest ideal of his ambitions, the winning back of Tua who sorrowfully bemoaned her fate in the cave of Nrok.

"I wonder if we shall ever see him again," mused Drigab as they watched Thrag disappear into the forest, waving a farewell to them.

"Probably, if we remain in this vicinity very long," said Sendalk.

"There must be a village of them somewhere around here."

"Doubtless."

"We shall visit it before we leave the vicinity."

"I'm afraid we cannot stay on Wrooad for more than three or four days," said Sendalk. "We have little more supplies than it will take to consume during our trip back through space to Nime, and we must not tarry too long here if we should ever see our own world again."

"We shall return at a later time?" queried Drigab.

"Most assuredly, bringing a larger number of supplies for a longer stay of exploration."

"What is our program for the next few days we stay here?"

"Nothing definite as yet. I believe we shall do a bit of exploring in this region, and then, prepare for our return to Nime."

TOGETHER, the two Martians entered their space craft, removed their suits designed to protect them from the greater atmospheric pressure of the earth as well as the density of the respiratory medium, and composed themselves to rest after the long hours of tramping through the jungle with Thrag, the troglodyte.

And Thrag was joyously on his way to the village of Nrok from which he had been barred through the clever trickery of the new chief, and in his hands he clutched the "kill stick" with which he would send into oblivion

all and everything opposed to the rescue of Tua, his mate. Frequently, he tested the qualities of the ray upon the various animals he encountered to assure himself that it was not a dream from which he would presently awaken once more into the grim reality of dis-appointment.

A hairy mammoth which suddenly interrupted him in his bee-line march towards the cliff dwellings fell before his onslaught, and from afar up in the top of a tree a brilliant plumed bird fell dead. He even turned it upon a hill of ants, everyone of the tiny, industrious workers falling dead. Satisfied that the "kill stick" was no myth and still retained its annihilating qualities, Thrag strode on boldly until late that afternoon he came to the white cliff where dwelt his native tribe.

The Meeting with the Troglodytes

GRUN was the first to see him, and warned him away, reminding him that he was exiled from the tribe for his recent perfidy, and that he could expect only death if he returned. Grun waved his stone hatchet menacingly. Thrag hesitated. Previously Grun and he had been staunch friends the two of them having hunted together as youths. The cave man had little desire to slay his friend with the "kill stick."

"I come not to harm Grun," remonstrated Thrag. "No one will die but Nrok. I have come for my Tua."

"Go away!" motioned Grun.

"Nrok will have you killed if he finds you here. Tua is Nrok's."

"Stand aside!" cried Thrag, waxing angry at Grun's stubborn attitude, when it was within Thrag's power to instantly kill his fellow cave-man. "I can kill you, if you don't!"

"I shall call the tribe, and we shall hunt you down and kill you like we would a bothersome animal if you don't go!" threatened Grun.

"I can kill them all with this," parried Thrag pointing triumphantly at the ray ejector he carried.

"What, with a stick?" queried the dubious Grun openly amused.

"Look!" exclaimed Thrag as he directed the rod in the direction of a small rodent a short distance away.

He pressed the button, and a white glare of light beamed forth upon the little animal which immediately fell dead. The eyes of Grun stared excitedly from his head as he gazed in awe and mystification at the startling scene enacted before his eyes. With a muttering of syllables to the effect that Thrag had connived with the evil spirits of the wood, Grun ran up the side of the cliff and with a loud shouting, which brought heads projecting from nearly every cave in the cliff side, disappeared within his own cave, convinced that Thrag was in league with sorcerers.

Up to the very foot of the cliff, Thrag boldly advanced underneath the surprised assemblage of heads which looked down upon him from the various cave entrances.

"I WANT my woman!" he cried. "I must fight Nrok who has wronged me, and then I shall be

gone with my mate from your tribe forever! We too shall dwell together far away!"

"Go away!" shouted Zerg, Nrok's underchief. "Nrok is on a hunt with others of the tribe. I guard his women and none shall have Tua. We shall kill you!"

With these last wards, Zerg sprang forth from the cave and began the descent, fully a dozen or more of the troglodytes following him from the other caves, all bent upon killing the audacious Thrag. The cave man waited for them patiently at the foot of the declivity, and Zerg was the first to reach the ground before Thrag.

It was not Zerg's intentions, however, to engage Thrag alone, for the latter's prowess was too well known among the tribe for Zerg to risk his rascally neck in fair combat. Zerg awaited reinforcements which soon joined him, all the while threatening the cave-man, but making no motions to carry out his great boasts. With the arrival of the dozen or more troglodytes down the face of the cliff, Zerg urged them forward with fierce cries, joining them, though careful not to place himself too ostentatiously in the lead.

The Battle at the Foot of the Cliff

THRAZ had the treacherous Zerg singled out and though the sub-chief had attempted to render himself inconspicuous in the rear, the avenging troglodyte had his eye upon him. As the cave men advanced, waving their stone hatchets and knives in accompaniment with weird cries, Thrag brought the weapon of the Martians into action. He pressed the button at the base, and from the end of the rod the bright ray sprang forth full upon the countenance of Zerg and two of his companions who toppled over dead.

At this terrible manifestation of the stick in Thrag's hands the others fell back in surprise before the weapon they had expected Thrag to wield like a club, perhaps clouting a few of them before the rest overpowered him. But the awful results attained by the mysterious light which burnt a hole in the daylight so astounded and terrorized them that they fled from the indomitable cave man as if he had been a plague.

"Go back!" urged Thrag, stepping across the three bodies of his fallen foes. "Go back, and I'll not kill you! I come to take Tua and depart in peace! Stand in my way and I shall kill you with this! I am the mightiest fighter in all the world now. Every living creature falls before me, even Owr'd!"

THE cave man referred to the great dinosaur as he patted the "kill stick" proudly. He had no desire to slay any more of his former companions than self-defense called for, because with the exceptions of the deceitful Nrok and such equally unprincipled underlings as Zerg, he bore them no enmity, realizing that it had been the schemings of the two afore mentioned individuals which had brought about his downfall. As they all fell back to a respectful distance from his ray ejector, he rapidly scaled the cliff face to the opening where Zerg had emerged.

Zerg's insinuation that he was guarding Nrok's women until the chief returned had led Thrag to the conclusion that where he had found Zerg he would also find Tua with Nrok's two women. As he burst into the cave and examined the huddled form of a frightened female in one corner, he gave an exclamation of disgust. She was Zerg's woman.

"Where is Tua?" he demanded of the shivering woman, whose fear stricken eyes bulged at sight of the awful weapon with which Thrag had just killed her mate and two others of the cliff village.

"In the cave of Nrok—beneath the overhanging ledge," she replied in fear. "Nrok no longer lives in this cave—he gave it to Zerg!"

Thrag knew the cave to which she referred, and quickly he made his way across the face of the cliff to the other cave designated by the widow of Zerg. There he was greeted in open arms by his beloved Tua who embraced him and pressed her tear stained face against his.

"I knew you'd come!" she sobbed.

"Tua!" was all he could utter.

In the darker recesses of the cave, the other women of Nrok looked on, and now that Thrag and his woman were intent upon each other, the two mates of Nrok sneaked stealthily from the cave, fearing that the wrath of Thrag might fall upon their luckless heads.

"Come!" he said. "We must go!"

"Where?" she queried.

"By the shore of the far-off sea where we shall be alone. We shall find a cave, and there we'll dwell in seclusion for the rest of our lives, and I'll hunt for you, dearest. No one will be there to disturb our happiness or set others against us by lying words."

The cave man lifted his mate in his arms.

"We shall be happy," she murmured.

"I'll fight for you with the 'kill stick,'" said Thrag, pointing to the destructive weapon which lay at his feet.

"Where did you get it?" asked the cave man's mate. "It killed Zerg and the others like the great fire which strikes from the sky when it rains."

"Some queer men with four arms who flew inside a great bird gave it to me," he replied.

Tua gazed into his face questioningly, wondering if the great sickness of the mind had overcome Thrag. Yet, there was the "kill stick," and had she not already seen its effect upon the cave men when they had sought to overwhelm her lover? The incredible story Thrag had told was no more unbelievable than the weapon itself, whose action she had seen with her very own eyes.

"Let us begone," she said. "Nrok will soon return."

"I do not fear him!" growled Thrag, his brow darkening. "I do not fear anyone—or anything!"

Tua embraced her mate in a tight squeeze.

"I want to kill him! I want to see him die!" hissed Thrag, his blood running hot.

A yell arose from below.

"What's that?" queried Tua in sudden fright.

THRAZ stood his woman upon her feet once more and advanced to the cave entrance to discover the cause of the new commotion. As he looked down from the cave entrance, he saw fully two dozen of the cave men assembled below him, all pointing and gesticulating excitedly at the cave entrance where he stood. With them was Nrok. The hunting party had returned and the details concerning Thrag's sensational return was being graphically described to the chieftain.

The Coming of Nrok—The Injury to the Fire Stick

"**N**ROK!" shouted Thrag gleefully over his shoulder to his mate. "Now I shall have my revenge upon him!"

The cave man picked up the ray ejector and walked back to the cave entrance where he could look down upon the gathering of the cliff dwellers. His savage heart beat exultantly as he methodically directed the weapon upon Nrok some fifty feet below him at the foot of the precipice.

Some of those who had been present when Zerg and the others had met their fate shouted warningly to the group of newly returned hunters to get out of sight of the death dealing weapon, but experience is the greatest teacher of all, and some people never learn until their fingers are burnt. An incident of fate was to save Nrok, however, in spite of his foolhardy disregard of the warnings of those who had witnessed Thrag's newly acquired powers.

The hand of Thrag closed upon the knob of the ray ejector. No light flashed forth this time. What was the matter? Again he depressed the button, and still the killing flash did not manifest itself. Thrag gazed in surprise at the weapon he had been given by the Martians, examining it closely. Something had happened to it, and now upon inspection, the cave man saw that the blunt point of the weapon was missing. Evidently it had become knocked off against the rock in his hurried ascent of the cliff.

THRAG experienced a sinking sensation. They were trapped! He would sell his life dearly, however, and before he died he would see that Tua should go with him instead of falling once more into the clutches of Nrok.

He must not allow them to realize that the weapon had been rendered useless and perhaps he might bluff their way to safety. He yelled and shouted from the cave ledge, expounding the terrible, destructive qualities of the ray ejector, pointing to the inert bodies of the three cave men he had killed with it.

"Kill us with the magic stick, then!" retorted the incredulous Nrok, who not for a moment entertained belief in the ray ejector's power to slay. "You can't do it; you lie!"

"Stand back!" cried Thrag, employing a last minute bluff. "I shall kill your whole tribe, if you don't!"

But his attempt at terrorizing Nrok and those who had not witnessed the death of the three trogolodites was in vain. They did not place belief in the wild assertions of those who had been present; evidently

their eyes had been playing them tricks. Had Nrok and the rest of the hunting party been a witness to the peculiar deaths of Zerg and his two companions, Thrag's words might have reached their ears laden with portent, but they would not believe it, even though the corpses of three of their number attested to a strange death which had overcome them, Thrag's failure to exercise the boasted powers of the weapon not only confirmed their scepticism but shook the credulity of those who had actually seen Thrag's effective use of the "kill stick."

"His words are false!" howled Nrok. "Seize him, and we shall kill him!"

The cave men, emboldened by the failure of Thrag's "kill stick" to function and by Nrok's bellowing command, leaped up the side of the cliff to drag the outlawed troglodyte from his cave and put him to death, according to the edicts of the Cliff Dwellers who meted out such fate to those who were exiled and then returned. Up the face of the declivity they nimbly ascended while at the cave's entrance, Thrag stood, his mate behind him.

"Do not harm Tua!" bawled Nrok to his men.

WHEN the troglodytes were halfway to the cave's mouth before which Thrag stood on a narrow ledge, the cave man took a large rock and heaved it down upon them. It hit the hand of the foremost attacker just as the fingers clutched a polished knob of rock in the cliff face, crushing the fingers of the troglodyte who with a howl of pain released his hold and fell back upon his fellows. They all tumbled ungrainy down the steep slope which characterized the lower half of the declivity in which the tribe had made its home for countless generations of innumerable ancestry. Nrok fumed and raged at this act, and wrathfully urged on his followers with all kinds of threats and promises.

"They will kill us!" shuddered Tua, hovering close beside her mate who stood ready with a heavy rock balanced on the palms of his hands outstretched above his head. "I shall die with you rather than belong to Nrok!"

"I shall fight to the last!" swore Thrag.

"Can we escape?" she asked.

Thrag shook his head sadly as he saw below him the menacing cave dwellers headed by Nrok, while above their cave lay twenty feet of smooth, insurmountable cliff's face to the summit of the precipice. Theirs was the only cave upon this level.

"Come down, or we shall kill you!" ordered Nrok, imperatively. "Come down!"

"And be killed at once!" remarked Thrag.

"Perhaps not, if you give up the woman and leave forever," argued Nrok.

"I'd give her to the sabre-tooth first," replied Thrag. "Rather would she have one of the hairy tree men for a mate than you!"

This last epithet enraged Nrok so greatly that he stamped up and down, shrieking commands to his men

to capture the dauntless two. Warily, the troglodytes approached the cliff's base, but immediately scrambled out of harm's way, as Thrag lifted the heavy rock in a menacing attitude.

"Let Thrag and Tua leave your tribe peacefully," suggested Thrag. "We shall find a new home."

"Never!" howled Nrok. "The woman is mine!"

"She'll die first!" spoke Thrag with vehemence.

"Not if I have your heart cut out!" yelled Nrok in a rage.

The Challenge to Combat

"**I**'LL meet you in fair combat upon this ledge," offered Thrag. "And to the winner goes the woman."

"We'll fight down here," insisted Nrok. "Come down."

"No," replied Thrag, distrusting the unscrupulous tribal chief, "we shall fight up here—with the rest of the men standing at a distance."

"Why should I fight for that which I can take," boasted Nrok. "To the top of the cliff; throw rocks down upon him just as he did to you!"

WITH alacrity, the members of the tribe obeyed, reaching by circuitous route a point above the cave in which Thrag and his mate were trapped.

"Inside!" ordered Thrag. "Quick!"

They had no more than disappeared within the opening of the cliff's face before great rocks hurtled down from above, pulverizing small pieces of the declivity where they struck. This was kept up for only a short time, and then there came an ominous cessation in which Nrok and his followers waited for Thrag to project his head from the opening. The troglodyte, warning Tua to remain in the safety of the cave's depth, proceeded cautiously to the opening where he could look down, but still be within the cave out of range of those above.

As he peered forth, a heavy stone axe came hurtling up from below, smashing against the interior of the cave a short distance from his head. He must be careful. At least, he now had a weapon.

For the next half hour comparatively silence reigned, but Thrag knew that on the summit above the cave several of the troglodytes had heavy stones poised on the edge of the cliff ready to crush him to death should he emerge upon the ledge before the cave. Suddenly, a shadow blotted the entrance, and Thrag, who had retreated to the back of the cave with his mate to be out of reach from what objects the cave men might hurl into the opening, jumped up nervously to investigate.

The Combat

THREE upon the ledge stood two cliff dwellers who had sneaked noiselessly up the face of the precipice while it had been guarded from above against Thrag's hurling more stones down upon them. Their eyes, unaccustomed to the gloom of the cave's interior, did not see the furious rush of the cave man until he was upon them. As Thrag grappled with one of them, a

vicious swing of the other's axe laid open a wicked gash upon his head, and then he was down upon the floor of the cave rolling over and over with his adversary. The remaining troglodyte sought an opening whereby he might crash his weapon down upon the head of Thrag without danger of injury to his comrade. The two combatants moved about with such rapidity that, being so closely locked in one another's embrace, the other cave man had little opportunity to get in the death dealing blow, or at least one which would stun the troglodyte, they were fighting.

Presently, the two became wrapped in a deadlock upon the floor of the cave, and the invader, with the stone axe raised menacingly, prepared to crash it down upon Thrag's head. Just as the bulky weapon ascended over the head of the exiled cave man, something clung to the up-raised arm from behind. The terrible blow did not descend, for Tua, creeping up from the rear, had seized the arm of the troglodyte at the precise moment, blocking the consummation of the man's intentions.

He attempted to shake her off, but like a leech she clung desperately to him, while on the floor her mate battled with the other cave-dweller. Hope died in the girl's heart as she saw other shadows darken the threshold of the cave. She heard the voice of Nrok.

"Grab him—hold him fast! Don't kill him—we have something better for Thrag!" . . . ordered Nrok as he and several more joined their two comrades in the cave. "Don't let the woman get away!"

CHAPTER VII

The Ravaging Ants

THRAg was overcome by superior numbers. His attempt to rescue Tua had failed, and now death stared him in the face, and an existence worse than death confronted Tua. He was bound with strong, thongs cut from the hides of animals. The helpless troglodyte was carried down the cliff face by several of the Cliff Dwellers who secured him to a thick post driven deep into the ground. Tua was placed in a cave under a strong guard.

Nrok came to taunt the man, outlining his fate, and graphically describing what was to happen to Tua, his mate. Thrag's tactiturn expression underwent no change, and so Nrok, tiring of the sport gave the helpless man a few savage kicks and left him.

All night he stood bound to the stake, being watched by a sleepy guard who kept the ring of watch fires burning, protecting them from the prowling beasts, who feared the flame and smoke.

Through the long hours of the prehistoric night, Thrag stood awake, gazing up at the brilliant, twinkling lights studding the black sky as they moved across the nocturnal heavens from the pursuing dawn whose gray, misty fingers proclaimed early morning. Then would the flaming sun arise from its cave in the east. Thrag saw the ghostly flush of the drab and melancholy suffusion of light assume a brighter aspect as the world

arose from its slumbers and the sun peeped over the horizon.

Before the dying embers of the fires reclined the slumped form of the guard and tender of the fires who had yielded to the arms of Morpheus. Thrag strained at his bonds; it was no use, for they held like iron. As the sun spread its beautiful reflection into the caves of the precipice which faced eastward, the cliff colony arose to its morning duties. They were up early this day, for had not Nrok promised them a rare spectacle in the manner of Thrag's passing?

And so Nrok and the other members of the tribe had arisen one and all to view the manner of death Nrok had in mind for the captive.

"What are we going to do with him?" asked one troglodyte curiously.

"Wait and see," replied Nrok mysteriously.

"Stone him to death!" came the suggestion.

"My plan is better," said Nrok.

"Are you going to tie him up and hang him by the heels at the forest's edge for some wild beast to breakfast on?" queried another.

"Your idea is a good one," replied Nrok appreciatively. "But I have a still better one."

"Burn him?"

"No."

"Feed him the bitter weed which tortures one in the stomach before he curls up and dies?"

"No," repeated Nrok, enjoying the mystery of the situation immensely as the Cliff Dwellers crowded around him, questioning his intentions concerning the disposition of the prisoner on whom Nrok had vented his vengeful spite.

"I'd give him to the hairy men of the forest to tear apart," suggested one.

"You are all poor guessers," announced Nrok, grinning at the bound man in evil anticipation. "Besides other wrongs perpetrated against us, he has killed three of our number. For that he must die a horrible, lingering death. What do you say?"

A loud, enthusiastic roar of approval arose from the ranks of the primitive men.

"Pull the stake to which he is bound from the ground," directed Nrok to four or five of the Cliff Dwellers, "and follow me."

They did as they were directed, the combined efforts of the cave men pulling from the earth the stake to which Thrag was bound. They carried the pole with the victim on their shoulders. Behind Nrok they walked, followed by the rest of the tribe who crowded around them, chattering excitedly. Whatever way he felt inwardly—Thrag did not betray, but put on an impassive front, even though he knew a terrible fate lay in store for him.

THEY walked but a short distance from the cliff and stopped near the edge of the dark jungle into which many of the troglodyte peered fearfully. No one was ever in the habit of venturing into it alone. When they entered the jungle, it was in the company

of many, such as the hunting party Nrok and his men had comprised at the time of Thrag's return to the tribe.

"Stop here!" commanded Nrok.

The cavalcade halted at the chief's order, wondering interestedly what next he would bid them do.

He pointed to the largest of several green mounds of earth.

"Shove the stake in there," he directed.

"The ants!" yelled the tribal members in exultant unison.

Death by the Vicious Ants

SO this was the selected fate Nrok had in mind for Thrag, one of the most hellish tortures conceived by man, the process of being slowly bitten and eaten up by the horde of hungry avengers, who would pour out angrily from their huge nest at the intrusion of the long stake. From head to foot they would cover the luckless troglodyte until he was a black, swarming mass.

The intrepid caveman, though he much preferred death at the hands of a sabre tooth or some other equally ferocious creature, never qualmed a bit as the horrible realization of his quickly impending doom smote his mind as he heard the cries of the tribe.

"The ants!"

Two of the cave dwellers drove the stake upright into the spongy interior of the ant hill while the rest stood by to watch the annihilation of the outlawed troglodyte. Cries and jeers were directed upon him, the mob impulse of civilized man overcoming their other instincts. He paid them no attention, denying them the delight of seeing him suffer.

The Attack of the Ants

FOR a time nothing occurred, and then from the ragged hole torn by the stake, a single, black ant scampered out over the protruding stake until he came in contact with the man. Here he stopped and investigated a moment, and then hurrying down the stake he disappeared within the hill once more. It seemed that the tiny creature had hardly ducked out of sight before once more he returned, this time with several companions who crawled inquisitively over the body of Thrag, the cave man, bound helplessly to the stake. The muscles of his leg twitched involuntarily as one of the tiny insects sank his mandibles into the yielding flesh of his limb.

A yell of derision greeted this movement, and a howl of laughter arose as a tiny trickle of blood oozed from the small wound. The insects increased in number as more emerged from the hill, ran up the pole and upon the doomed man.

Jabs of pain shot through his lower limbs, feeling like points of fire as the ravenous ants bit him in numerous spots upon the lower sections of his anatomy. More of them were coming to join those already there, and soon the ant hill's immense population would swarm over him and he would be devoured in a surprisingly short time, his clean picked bones attesting

to the fact that a human being had fallen prey to the ants. Those now upon him were but the vanguard of the destroying hordes which was to come.

He glanced downward. His feet and legs were spotted with the tiny, black devils, and now from the many entrance ways to the ant city there poured forth several dark, orderly streams of the insects. He was glad they were coming so soon in such large numbers—it would be over quicker.

SHARP, excruciating prickings all over his legs made them feel as if they were afire, and it was with great will power that he refrained from wildly threshing his body about within his bonds. Such a procedure would in no whit alleviate the pain of suffering or shake off the clinging, biting ants, and would only provoke to greater laughter and delight the watching troglodytes, who exulted in the morbid pleasure of seeing a fellow man die in such a horrible manner.

His thoughts were not of himself, but of Tua. What would happen to her? How he would like to get his hands around Nrok's villainous neck. His fingers tightened. Tua would doubtless seek the first opportunity of eluding Nrok by the only method of escape left open to her—death! He now commenced feeling the fiery bites around his hips. He looked down. His feet were nearly covered with the terrible insects which were piling over one another in their eagerness to be at him. He shut his eyes.

A loud cry arose from the ranks of the Cliff Dwellers who were the interested spectators of the scene. Doubtless one of the carnivorous beasts of the dense forest had sought the opportunity to spring among the troglodytes for its early morning meal. Thrag wished that it would spring upon him and end his misery. No, on second thought he would be glad to endure the pain if it would seize Nrock. He opened his eyes.

The Martian Space Plane—The Rescue

Thrag gasped in astonishment at the unexpected sight which greeted his eyes! There above him floated the great bird in which dwelt the two weird men who had given him the "kill stick!" Had they come to save him again?

The troglodytes were pointing at the bird and gesticulating in alarm as with wild cries they ran from the path of the huge monster which dropped in their midst. His strange friends would have to hurry, thought Thrag, if they were to save him, for already the hungry insects were waist high, and creeping up around his armpits. The pain was intense, Thrag gritted his teeth. The cave-men had all disappeared in terror when the Martian space ship had landed among them, scattering to their cliff retreats from which they peered fearfully back upon the great wingless bird.

CRUISING over the cliff, seeking new sights of the strange world they had come to visit, Sendalk and Drigab had perceived the assemblage of troglo-

dyles from the cliff colony and had dropped lower to investigate. Through the telescope, Drigab had recognized Thrag, and immediately they had perceived his plight, and they were dropping among the bulging ant hills to rescue the cave man the second time from the jaws of death.

The door of the space ship opened, and the two Martians sprang forth. Drigab cut his bonds with some sharp instrument he held in his hand, while Sendalk slapped and brushed off the insects from the cave man as best he could. They clung, and two of the ants appeared to take the place of every one brushed off. The cave man's muscles were now so cramped and inactive that he could hardly stand upon his feet. Sendalk spoke something to Drigab and then disappeared within the space craft, the latter now brushing the hungry horde of insects from the suffering Thrag. Sendalk appeared with a bulky instrument he carried in his hands which he held up before Thrag. A blue light sprang forth to envelope the cave man's body in a misty haze, producing a startling effect. Every one of the myriad of tiny black ants dropped off from his body and scampered madly into their hill to escape the blue light.

As the light of the Martians struck him, Thrag was conscious of a burning feeling, but it was not an unpleasant sensation. Looking down, he saw with surprise that the thousands of biting ants were rapidly dropping from his body under the glare of the blue light. When the last one had disappeared, Sendalk motioned for Thrag to enter the space craft. The two Martians followed the troglodyte within, and immediately donned their protective suits and helmets, for already they were becoming dizzy from the temporary exposure to the earth's denser atmosphere.

Drigab took a jar of some liquid from a receptacle in the space craft and bathed the tortured lower limbs of the cave man. The liquid had a soothing effect upon the bitten flesh, which was covered with a welter of blood, and eventually, the cave man was conscious of no pain at all, so great were the healing qualities of the liquid.

As the circulation of his arms and legs returned to normal once more, after having been released from the bonds which had held him a prisoner to the post since the previous evening following his capture, the cave man arose from his seat within the space flyer, and by gesticulation made it known to the two Martians that he was in a hurry to leave the craft.

They opened the door in compliance with his pantomimic request, and he stepped forth, running in the direction of the cliff where the rest of the troglodytes had taken refuge. Curiously, they left the space craft too, and followed. Thrag ran unhesitatingly to the cliff face up which he scrambled to the cave of Nrok. The Martians stopped at the base of the precipice. Thrag found the cave of Nrok empty.

"Where is Nrok?" demanded the troglodyte of one of his fellow cave men he found in a cave below that of Nrok's.

"He fled that way—into the wood!" exclaimed the frightened man, viewing Thrag in awe after he had seen with his very eyes the troglodyte hobnobbing with these strange creatures who flew in a weird-looking, wingless bird.

"Where is Tua?" asked Thrag.

"Nrok took her with him to escape the terrible bird from the sky!" came the frightened answer.

A multitude of conflicting thoughts ran through the mind of the cave man. Nrok had disappeared in the forest to the north with Tua! He must follow at once! But would he find them? He clenched his fist as he realized that he would comb the entire forest for his mate, and for the added tidbit of pleasure to be derived from killing Nrok! Then in a flash a magnificent plan struck him!

CHAPTER VIII

Cave Man and Mate

HE hurried back down to where the two Martians awaited him at the foot of the cliff, after having appropriated a stone axe and knife from the cave man he had questioned. Eagerly, he chattered and motioned to the perplexed visitors from another planet. They shook their heads in puzzlement.

"What does he want, I wonder?" mused Sendalk.

"I don't know," replied Drigab, "but it is evident he is very excited over something."

Thrag ran into a nearby cave and came back leading a protesting woman. He pointed to her, and then to himself, and then to the forest several times, finally allowing the frightened woman to return to her cave once more. He continued to point and make motions in the direction of the forest, and now he urged the puzzled Martians back to the space ship. Presently it dawned upon their minds what the troglodyte was trying to impress upon them.

"He has lost his mate!" exclaimed Sendalk.

"She is in the forest!" added Drigab, piecing together the information Thrag had attempted to convey them by pantomime.

"He wants us to help him find her!" said Sendalk, as Thrag led them back to the space craft.

The two Martians made it evident that they understood him, and the three entered the space craft, Drigab closing the door behind them. Thrag was to experience the greatest thrill ever to be accorded a cave dweller as the space ship arose above the trees, slowly rising past the cliff in whose caves huddled the frightened troglodytes. A wave of exultation and exuberance swept over Thrag, the cave man, as he gazed down at the cliff top from the interior of the metal bird. But he had more serious business at hand than the first joyful sensations of riding through the air, and as the space ship swung far above the jungle, he joined the two Martians in an eager exploration of the expanse of vegetation below them.

THRAF knew that Nrok would not remain in the terrible jungle for long, but would seek the broad

clearing in the great forest which existed a short distance of some half mile north of the rugged cliff. And as they neared the great clearing, Thrag's eagle eyes examined closely every moving animal below him. Presently he gave a cry of discovery as he pointed down upon two tiny figures.

Drigab followed the pointing finger with the lens of a double barreled telescope, and then handed the instrument to the cave-man. As Thrag gazed through the optical medium he experienced the greatest shock in his career. Nrok and Tua stood right before him! Nrok was dragging Tua by the hair as she strove to escape his grasp, hanging back, reluctant to continue. They were so close that Thrag could see the beads of sweat standing out on Nrok's hateful countenance.

Thrag pulled the glass from his eyes to make a grab for Nrok, but all he clutched was the empty air of the space ship as the craft flew far above the jungle. Below them, in the clearing were the two tiny, human dots. Thrag was at a loss to explain the phenomenon, realizing that by some mysterious means he had been transported for the short time he looked through the glass to the clearing below.

But he had little thoughts concerning the mystery of the telescope. He wanted to be down in the clearing where he might be at the throat of the man who had wronged both him and his mate, and rescue from the rascally Nrok's hands his beloved Tua. He excitedly urged them to descend.

"That male down there has stolen his mate," said Sendalk significantly.

"I wonder why they had him bound for the ants to eat up?" queried Drigab.

"We shall probably never know," replied Sendalk.

They shot down swiftly into the clearing, for as Nrok perceived the dreadful bird above him he ran swiftly with the reluctant Tua to the jungle. But the Martians' skillful control of the craft beat him to it, and they landed between him and the jungle.

Before they opened the door of the craft to emerge, Sendalk offered Thrag one of the ray ejectors the cave man had recently coveted. The troglodyte looked upon it dubiously and then clutched his stone axe and keen knife more tightly as he waved away the proffered "kill stick." His own primitive weapons were far more dependable, thought he.

IF Nrok had been stricken with terror at the descent of the terrible bird he expected to devour him at any moment he was astounded to the *ninth* power by seeing Thrag emerge from it. But a few moments ago, he had seen the troglodyte bound fast to the stake in the ant hill, the tiny insects swarming over the lower part of his body. Tua also gazed in amazement at the scene which surpassed by far the most radical illusions of her wildest dreams.

Behind Thrag came the two Martians, but now Nrok was not to be surprised at anything he saw, even if twenty forest monsters should emerge from the small door of the craft.

"I have got you, Nrok!" exclaimed Thrag, "You must fight with me!"

Thrag's Challenge to Nrok

The cowardly chief of the troglodytes backed away, and attempted to elude his chosen nemesis, but one of the Martians intercepted him, and in abject fear, Nrok turned back in the direction of Thrag to escape the weird devil whose four arms swung at him menacingly.

"Fight!" cried Thrag.

Nrok was of the opinion that he would have to, for Thrag stood between him and the comparative safety of the jungle. He aimed a vicious swing with his stone axe at Thrag's head—and missed, as the nimble troglodyte whom he had recently consigned to the torture of the ants sprang beneath the blow and plunged his knife to the very hilt into the black heart of Nrok. Choking and gasping, the life blood welled from the dying cave man, who having fought underhanded all his life had a last fallen in fair combat.

Thrag sprang to the side of Tua who sank weeping into his arms, and tenderly he lifted his beloved mate and bore her to the safety of the space ship. She shuddered in wide-eyed alarm as they approached the two weird creatures standing beside the monster bird.

"Do not fear them," consoled Thrag. "They are our friends, and have saved us from Nrok and the Cliff Dwellers."

The imitative Tua became less afraid after her mate's assurance, and with the kindly manner in which the Martians treated them. Tua was all surprise and alarm as they arose in the space craft far above the jungle, but her fear changed to delight as they swung away over the plain and forest, and she saw that they were not going to fall.

Thrag gained the attention of his friends from another world. He pointed to Tua and then to himself; then he pointed away to where a far off sea rested upon the horizon, lazily lapping the prehistoric shores of a world whose scientific progress was yet to be realized.

"He means that he wishes to be taken there!" explained Drigab. "They will be far from the people who sought to kill him!"

"We can do better than that," replied Sendalk. "I'll transport them to the antipode of Wroaad where they may live in peace to the end of their days."

"It would be interesting to take them back to Nime with us," suggested Drigab.

"But we can't," replied Sendalk, "for several reasons: the atmosphere of Nime is too rare to keep them alive, and we would have to keep them in hermetically sealed rooms containing an atmosphere as dense as that of Wroaad. The living conditions and food would be unlike theirs, and they could not subsist upon our methods of living. Then too, even if they were able to live on Nime, we haven't enough supplies for four of us on the return journey."

"You are heading for the other side of Wroaad?" queried Drigab.

"Yes," answered Sendalk. "I should like to see what it is like before we return to Nime. Then too, we can leave Thrag and his mate there. It will be like a new world to them."

"We shall rise above the atmosphere, then," said Drigab, his four hands on the various controls of the interplanetary flyer.

FAR above the earth they soared, until the curved contour of the planet was visible to the astounded Thrag and Tua. Higher and higher they cruised until starlight replaced daylight, the craft entering space where a flaming sun, a silver moon, and iridescent stars reigned eternally in the blackness of the ether void.

It is impossible to describe the emotions, thoughts and sensations of the troglodyte and his mate as they viewed the awesome wonders of the vast cosmos. With amazement they stared back at the crescent-like surface of their planet which loomed so large before their eyes,

"It will be a long time," remarked Drigab, "before these people reach a stage where they can visit our planet in space craft similar to ours."

"But it will come," affirmed Sendalk, "if in the meantime their race does not die out. It is the law of evolution. Our forebears went through a similar ascent from the lower animal life."

"By the time the peoples of this world visit us, our race of beings may be dead and gone, and our planet nearly as lifeless as Dracom."

"Or else we shall move to another world of some other solar system which is similar to Nime," added Sendalk.

The shroud of night lay heavy over the opposite side of the earth where the two Martians finally brought the craft to rest. Here, the four spent the night within the space ship around which the prowling night life of the prehistoric world roared, coughed, sighed, screamed and moaned, their concert of sounds lulling to sleep the two troglodytes. In such strange surroundings, unaccustomed to the noises of the carnivore, Drigab and Sendalk rested but did not sleep.

A Home for the Pair of Cliff Dwellers

WITH the break of dawn, the four ventured forth, Thrag and Tua to find a cave in which to live, the two Martian explorers to find to what sort of a land they had come. The two latter found it to be similar to that which they had just left upon the other side of the planet, but to Thrag and Tua it was truly a new world,

and they were not long in finding an ideal, primitive residence.

UPON a tree-covered promontory whose waving fronds threw a checkered shade about the entranceway to the cool cavern beyond, they found their home. A short distance away, a bubbling spring gurgled happily, its crystal waters dancing away with noisy abandon down the moss coverlet carpeting the slope which led to the forest beneath. The beauty of the spot impressed itself even upon the more practical minds of the Martians.

"How primitive, wild and lovely!" exclaimed Sendalk.

"We shall return, some day," promised Drigab, ignorant of the great war upon the planet Nime which had sprung into flame following their departure. At that very moment it was shaking down the bulwarks of their civilization, destroying the scientific advances of the little red planet, and reducing its remnant of survivors back into a state of savage barbarism.

They little knew that upon their return they should be thrown into a chaos of disorderly conflict which would see no more interplanetary flights for several thousand centuries to come.

But perhaps we shall hear more about that at a future time. Right now, we are more concerned with Thrag, the cave man, and his mate, Tua, for whom he so nobly and often fought, ready to lay down his life for hers if the occasion arose.

The Martians, reluctant to leave this earthly paradise, lingered with the two reunited troglodytes until the sun reached its zenith, and then they boarded their space ship for the return trip across solar space to their neighboring world.

Together, Thrag and Tua stood upon their lofty citadel and watched the ascent of the space ship. Through the transparent section of the cosmic flyer, the two Martians waved their farewell, and the cave man and his mate whom they had so nobly served responded as the space craft rose higher. It gained altitude slowly, and then, increasing its speed, it shot off up into the sky, quickly dwindling to a small dot which disappeared.

"Was it all a dream?" whispered Tua, gazing into the strong features of her mate adoringly.

"No," replied Thrag, holding his savage little woman close to him, and addressing her in their primitive language, "but from now on I hope it will be a dream—such as I have always dreamed."



Jeremiah Jones, Alchemist

By P. Schuyler Miller

Author of "Cleon of Yzdral," "The Arrhenius Horror," etc.

P. SCHUYLER MILLER in this story depicts what we may call modern alchemy, and indicates that the modern professors of the art are going in the footsteps of the old votaries. It is interesting to follow out the curious ramifications which the author has introduced into this narration. It is not necessary to speak of Mr. Miller's ability as an author of science fiction stories. All of his work has been of high order and his stories have been greatly enjoyed by our readers.

Illustrated by MOREY

"JAMES," said Jeremiah Jones, "the alchemists of medieval times were undoubtedly the greatest scientists the world has known."

I blinked. The statement hit me squarely between the eyes with something of the disconcerting fervor of a ripe tomato. I felt it land with a sort of dull impact among my neural centers. I felt its implications sending out sinuous little rivulets, trickling down through the ramifications of my frontal lobe. They swelled in volume, rushed joyously and madly along the pathways of my waking brain, and burst with savage glee into my consciousness, swamping it utterly.

"What?" I asked.

"I said," Jones repeated, "that the medieval alchemists were the world's greatest scientists."

I looked at him. He was Jones, beyond a shadow of a doubt. I knew that figure in the big arm-chair far too well to mistake it. I could close my eyes and still see it. And Jones was no prepossessing figure. Five feet six, inclined to plumpness—chubby is the term I need—with sparse, bleached hair, bright blue eyes behind enormous spectacles, a mere button of a nose, a cherubic mouth perched between round pink cheeks, legs that swung an inch or more clear of the floor, ridiculous little feet in glistening shoes—every item was complete. It was Jones all right! That limited the possibilities to three: (a) my ears had gone back on me; (b) I was out of my head; (c) he was, I chose the latter, and I acted upon the former.

"Oh!" I said, with some show of intelligence.

IT was a wasted effort. Jones has an exceedingly penetrating insight into the minds of his listeners, when he chooses to exercise it. Or it may be an inherent suspicion, working with an inferiority complex, as T. Paterson Fosdick says. At any rate, he knew that my understanding was about as clear as the

Grooterkill in a February thaw. His voice rose, as it tends to do when he becomes impatient, and grew a little querulous.

"James," he cried, "you were not listening. I think—I think you were asleep! I know you were!"

I tried to save what face I had left. "Jones," I protested, "I heard every word you said. I argued. I talked back, a little, anyway. I disagreed with you on several important points. And you say I was asleep!"

"People have been known to talk in their sleep," he replied tartly. "Certainly your arguments showed no evidence of great concentration. Come—what did I say? What were we talking about?"

I really had been listening, up to the time he hurled that last bomb at my head. I proved it to him.

"Well," I told him, "I don't know just how it all started, but after a while we were talking about that new light-weight steel they've just put on the market for dirigibles. And then one thing led to another, and anyway, I remember you said that an up-to-date metallurgical chemist could make an alloy to fit any set of requirements whatever. I guess I disagreed with that, and we were arguing, and then it sort of died out. And then you sprung that one about the alchemists."

The Alchemists of Old Times—Their Power to Do Things

"EXACTLY," Jones agreed. "It is really remarkable how you can remain comparatively alert while to all appearance you are in a stupor. I will reiterate my point. Quite apart from being the fathers of modern science, the alchemists were the greatest scientific geniuses the world has known—as a class, that is."

"But Jones," I objected, "they had no system or logic. They were hag-ridden with superstition and prejudice—charlatans, every one of them! A vaude-



He uttered something like a squeak, spat violently on the floor, yanked open the back door, and fairly ran out, his two frozen-faced gorillas behind him.

ville slight-of-hand artist has more science than they had!"

"James," he declared, "for a man with a college degree, you show as little evidence of education as any person of my acquaintance. You generalize from isolated cases with utter disregard for the laws of statistical treatment, and you are not even correctly informed as to your basic facts. Certainly you could never have been a scientist! I fail to see how any conscientious editor can honestly print your mental vagaries, as it is. But I am not so fully informed on these matters as on others of more importance."

I opened my mouth to retort. I closed it with the sheepish feeling that I was snapping at flies. Jones' slender, really beautiful hand waved me back into my seat. It was utterly unlike the physical man, that hand, but it held the true key to his character.

He leaned forward in his chair, placing the tips of his toes on the floor as if he was about to spring at me, poking his round head forward like a disturbed turtle, and peered earnestly into my face. He began to lecture, underlining his words with swift, birdlike gestures of his delicate hands. His voice was birdlike,

too—thin and eager, spilling out like the twitter of a sparrow.

"Listen here," he said, "I admit that they had no system such as ours, no tables and annals and indexes to abstracts in a dozen languages. Their methods were arbitrary and empirical. They had no knowledge of laboratory technique, nor of mathematical theory. They were mystics and visionaries. But they had tradition, and they had genius!"

"Consider them," he went on. "Most of their lore was passed down in coded manuscripts or by word of mouth. They were forced to plough through masses of colloquialism and idiom. They had to understand the moods and philosophies of their teachers in order to interpret what they were taught. They had no intimation whatsoever of the possibility of extending the results of one experience to the formulation of another. They went at things by chance and by instinct, and what they saw and felt and heard they remembered. Their minds were enormous catalogues of facts and formulas, cluttered together without the slightest regard for system or relation. They had no concept of universal law—no assurance that a happen-

ing would occur twice in the same way. To them as to their world, the universe danced at the will of a deity as human and capricious as any legends could make him, playing with a toy he had casually created. When they succeeded in duplicating results, it was because they caught him off guard, and when they failed, it was because he had changed his mind. And in spite of it all, they got results!"

"Results?" I demanded. "What results? What did they ever do? Transmuted gold, the elixir of life, the philosophers' stone, the universal solvent—good Lord, Jones, they were working at *impossibilities!* Look at their formulas—queer-shaped plants, animals' blood, powdered mummies, magic stones—all mixed together with some sort of ritualistic *hocus-pocus* over a fire of dried manure from a black cow born in the full of the harvest moon! Rubbish!"

"Nonsense!" snapped Jones, flushing a delicate shell-pink to the very roots of his hair. "You know nothing whatever about it! You speak from hearsay—the mockery handed down by those who could not or would not understand them. I tell you, James, they were great men—great scientists. They did things that we can't do. Some of them were quacks, but how many of our present-day 'Doctors' have a real degree? How many can use what little knowledge they have? You listen to me, James Abercrombie, and I'll try to drive some of the ignorance and prejudice out of your head for you!"

A Dissertation on Alchemy and Its Results

TAKE those formulas that you scoffed at. Every single one of them can be translated into terms of modern reagents and modern practice. I don't mean the chemicals alone—most of those have already been identified and go under their old names in the drug-stores, like vitriol and vitriols for sulfuric acid and its salts, or lunar caustic for silver nitrate, or aqua fortis and aqua regia for nitric acid and its mixture with hydrochloric—muriatic—acid, or various 'butters' for chlorides and 'flowers' for finely divided powders—you know how many of them there are. Some are hard to figure out, because the name was a local affair or because they used some code-word for it. What I mean are the actual conditions of the experiment.

"Suppose there *was* a reaction to be carried out over a fire of cow dung. Ten to one the organic vapors from that animal waste played an important part in the reaction—ammonia, for instance. Suppose it had to be carried out by moonlight. A modern physicist would substitute polarized light. Suppose it required sunlight, and the reactants were to be placed in a stoppered flask of rock-crystal. Well, ultra-violet light is of immense importance in some chemical and physical processes, and quartz passes it where glass won't. And various colored gems transmit various other colors of the spectrum. Remember, Barnes has found that it is a short region in the green that breaks up ice.

"As for your weird organic agents—wolf's blood and cat's liver and the like, you ought to know perfectly

well what they mean. The subject of organic catalysts hasn't been covered very thoroughly until of recent years, but you know, as well as I do, the enormous importance of vitamins and hormones and glandular secretions like adrenalin and insulin. They determine what reactions occur in our bodies, and it is only a question of time before we duplicate those reactions in the laboratory and find other uses for those mysterious agents. Well, then—don't glands, raw or dried, contain their secretions? Doesn't wolf-blood contain the hormones of the wolf? Do not various plants produce certain of the vitamins, not to mention their natural oils? Will not a male cat have different glands and different secretions from a female and a freak from a normal animal? Of course!

"James, I have a book coming—a copy of the writings of one of the greatest Hindu alchemists who ever lived. The things he did, by trial and error and a lot of luck, mixed up with a little scanty tradition, would astound you. He made gold and silver. He prolonged life indefinitely—lived himself to be three hundred and fifty, and then died when an elephant stepped on him. He is said to have had a marvelous variant of the philosopher's stone, and the universal solvent. I confess, I can't quite imagine what he kept that in, but it may have had properties that would permit some subterfuge to be used. At any rate, I should have that book within the week, and I am going to translate some of its more important processes into modern terms, going at the thing intelligently, and I expect that by the time you get back from your vacation I will have the thing on a working basis. Really, I can see no reason why I should experience any difficulty. Just for tradition's sake, I believe I shall commence by synthesizing gold."

That was that. I tried feebly to argue a few points, which he promptly ironed out. I remember that he explained the ritual and spell-weaving as either a repetition of the formula in some secret terms or a rhythmic word-sequence used in timing the reaction. He said that up-to-date astronomers use such rhymes in timing shooting stars. I looked it up the next day, at the library, and he was right. They do. Every syllable marks a unit of time. Anyway, he talked me down quite effectually, as he usually does, and when I left he was fairly beaming with satisfaction.

Five days later I took the noon train for North Lake, for a long-anticipated month of relaxation. Jones was down at the depot, but he didn't see me. Just before my train pulled out, the through express from New York came in and stopped. A prosperous-looking individual hopped off, handed a huge square parcel to Jones, and climbed back on his train as it drew out of the station ahead of ours. The last I saw of Jones, he was perched on a tall crate on the station platform, his legs kicking merrily against the slats, while he tugged at the stout canvas sheath of his big book. He was whistling his favorite anthem, "Rock of Ages," in an unearthly minor key, and the timing would have hurried "Yankee Doodle."

The Book in Colloquial Sanskrit—Attempting to Translate It

LUCKILY the thing was in colloquial Sanskrit of a primitive sort. There is no telling what might have happened if he hadn't had to bone it all out with a dictionary and grammar. The gold process was pretty long and involved, with quite a few pretty tricky code passages, so Jones decided to run off a couple of simpler reactions first, to get the swing of translating and to test his theory. He picked three short, simple sections out of the book, more or less at random, turned them into modern chemical language, and proceeded to follow directions. As I say, he was not up on Sanskrit, and he had neglected to figure out just what he was making before he started on them. After a week of high-tension work—for the things were none too simple when modern complexities had been introduced—he had three small flasks filled with three evil-smelling liquids. He learned later that the smell was supposed to distinguish one from the other.

At any rate, he had them, and one afternoon when Sydney Smythe had dropped in for a moment he decided to finish up his translations and find out what he had. There was a lot he had to guess at, for Sanskrit idiom is no cinch, but it turned out that he had spent his week synthesizing two love potions and a mange cure.

Now, Sydney Smythe is known from here to Skin-evas as a Practical Joker with heavily leaded capitals. Jones isn't above a bit of fun himself, when there isn't a boomerang in it. As it happened, Sydney had an aunt who had a cat—an eminently respectable beast known familiarly as Samuel, who loved to slip up behind male callers and chew their calves reflectively, at the same time honing his talons on the upper reaches of the same member. Jones had a cat too, Tobias by name, with all the other's virtues and none of his weaknesses—just such a cat as P. G. Wodehouse has immortalized under the name of Webster. But Tobias, or Toby, was no hypocrite or spoil-sport. He was fat and jolly and lazy, he liked a mouse in season if it didn't require too much effort to nab it, and his only verbal responses to external stimuli were a burbling purr, originating deep in his internal organization, and a feeble wail that was forthcoming when his warm milk was late. Samuel and Tobias had met once and only once, and Jones was not fond of the other animal. Consequently, he so far weakened as to permit Sydney to carry off one of the love philtres.

I really don't think that Sydney intended a boomerang. As he explains it, he had gone no further than the front steps when his aunt, accompanied by Samuel, put in her appearance. He heard opportunity knocking and poured out his libation then and there into a saucer that was squatting beside the doorstep. Whereupon Samuel advanced smugly upon it, and would have fallen low had not the Pekinese next door, Toby's oldest and best friend, resented the trespass and treed the alien. And then Jones came to the door, and with him Toby, and the deed was done.

The potion worked. Toby has never been the same since. He lapped the malodorous contents of his saucer dreamily, licked his lips with a gourmandish satisfaction, erected his tail stiffly at an acute angle to the vertical, and swaggered down the path toward the sapling under which the Pekinese was reviling the enemy. The dog sensed something unnatural in the lusty swing of Toby's stride and betook himself elsewhere. Tobias strode up to the foot of the tree, opened a mouth that seemed excessively full of teeth, emitted a hoarse bellow, and went right on up after Samuel.

The Beginning of the Serious Work

THAT was the beginning. For five days on end Tobias roamed the world, his fame keeping three jumps ahead of him all the while. Tobias, socially, had arrived. Complaints came flocking in, by mail and by phone, until Jones retreated to his library, disconnected the telephone, ignored the mail carrier, and set to work to find an anticalyst, as Sydney put it. He did find it—a truly effective queller of amorous ardor—and he finally managed to administer it, with commendable results, but he soon found that he must test the mange cure too, and then an insect exterminator, until in the end he had synthesized some dozen compounds in which he was not at all interested, while his gold went by the board. Finally, just ten days before I returned, he got down to work on the real problem of transmutation.

Sydney Smythe knows absolutely nothing about science. He dithers at the complexities of Tom Swift. But nobody has ever been able to persuade him that he is not a second Jeans or Eddington, or at the very least a Slossen. As formula after formula was tested and found good, a great and noble faith grew in his heart. And when the unfortunate affair of Tobias died away in a dull mutter of feminine vituperation, and Jones retired to his laboratory to begin on the old sorcerer's *pièce de résistance*, those who knew him sensed that the baleful gleam in Sydney's bulging eyes meant that a scheme of some sort was brewing beneath his meticulously parted curls. One and all they spread the alarm, and one and all vowed to turn a deaf ear to his cajolings and pleadings, but—one and all were only human.

Sydney wasn't much in evidence during those ten days. I have always felt that he was artfully trying to lull any suspicions that Jones might have had as to the nobility of his motives. Once he came and pored over the lengthy procedure that Jones had dug out of the dusty Sanskrit, and once he stared open-mouthed at an electric inferno where giant tubes hurled vibrant helium nuclei at a tiny, dazzlingly hot crucible of platinum, hung between monster coils. And then he went away and brooded over what he had seen, and, presumably, read the more inspiring portions of the good old story of Midas and his golden hand-clasp.

The minute I stepped off the train I knew that something was boding in Springville and that Sydney Smythe or Jeremiah Jones was at the bottom of it.

Nothing ever happens to anyone else. That evening, as I was passing the meso-colonial residence of T. Paterson Fosdick, the President of our Board of Education, I saw a familiar form coming down the high front steps. I was in no mood for a meeting with Sydney Smythe, and I loitered along behind him until he turned at the corner of Spring and Eagle. I paused for a moment in the shadow of Bill Sutherland's hedge. Sure enough, he made a bee-line for the savage-looking spike-fence that surrounds the holdings of the Methodist parsonage. Sydney Smythe is a good Presbyterian. Something was a-foot.

Jones was properly glad to see me, though I doubt if he realized I had been out of town for a month. He waved me to my usual chair and sank into the depths of his own. It was all of ten minutes before he spoke. He sat staring wide-eyed into the open fire, with a still-battered Toby snoring in his lap. And when he stopped absently stroking the cat's fur, and began to make little passes with his hand in the air, like an amateur hypnotist, I knew that a brand-new project possessed him.

I had had enough of solitary musing in the past month, and I had no doubt that Jones had too. I plunged willy nilly into conversation, dragging him out of his reverie.

Mrs. Campbell Enters the Picture

"**I** SEE Mrs. Campbell has been around again," I remarked in a loud voice.

His head bobbed up. His hand halted in midair. Toby opened his eyes and stared at me reproachfully. Something like a strangled gulp came from Jones's cherubic lips.

"Uh—yes," he blurted. "Yes, of course. Certainly."

"The room looks like a museum," I told him. "Everything in its place—a place for everything—good heavens, Jones, I don't see how you find a thing."

He was fully conscious now. "I can't," he complained. "Abigail sends her when she knows I'm out, and I can't find anything for weeks and weeks. Why must one have a married sister? And why can't she leave me alone?"

"It just isn't done that way," I replied. "If she didn't come around once a month and clean house, you'd be smothered by your own stuff. Or you might just sit here with Toby on your lap, and stare and dream until you both starved to death. It's good for you to have to dig for your notes now and then. Otherwise you'd forget them entirely."

"Er—yes," he admitted, "I suppose you are right. I am inclined to be a trifle absent-minded and disorderly. But when one is pondering an important question, one has no regard for the trifling details of household organization."

"You've got something new under your wig?" I wanted to know.

"My wig? Oh—I see—yes, there is something that has been bothering me. This unfortunate affair with Toby has made me wonder—. James, think of the en-

ormous amount of trouble we could avoid if we could predict the future. I mean from a strictly scientific basis, of course—nothing pseudo-scientific or psychic. This is a world of law. It should be possible—."

He was interrupted by a hammering on the door. Jones has never had a door-bell, and it usually takes a veritable barrage to rouse him out. He looked helplessly down at the blissful Toby, but before he had aroused sufficient courage to dump him off on the floor, the door opened and Sydney Smythe breezed in.

He was inwardly exultant over something. I could see that in his sleek smile. And he was none too pleased at seeing me.

"Don't get up!" he cried. "It's only I. Hello, Abercrombie—didn't know you were home. Good trip? Bound to be, the weather we've been having. Finest I've ever seen."

"Sit down, Mr. Smythe," said Jones, waving vaguely in the general direction of a chair. Sydney drew it up beside mine and sat down, leaning forward with his hands on his spread knees, like an expectant gargoyle.

"Been solving some more problems, Mr. Jones?" he asked brightly.

"No, as a matter of fact we were just discussing one that is as yet unsolved. It fascinates me. I am momentarily free, and it may be that a little study and research—."

"Free?" interrupted Sydney. "What about the alchemy? You should have been here, Abercrombie. Marvelous what those old fellows knew—simply marvelous! All kinds of things that we can't touch today. Has he told you? He's been translating some old recipes out of Egyptian or something, and they worked out perfectly. Enormously valuable information locked up in those old books, don't you think?" He turned to Jones again. "You say you're done?" he demanded.

"Er—yes, quite finished for the present," Jones replied. "I remember now—I haven't seen you for some time. I had just begun the transmutation experiments, had I not? Very interesting it was—very."

"You mean—you made gold?" Sydney's voice was tense.

"Gold? Yes, certainly. Quite simple and straightforward. It might as well have been some other element, though—there is no essential difference in the procedure. Very interesting work that. It casts a good deal of light on those early scientists and their abilities and limitations. I have the notes somewhere about, and a sample of the gold I synthesized, unless Mrs. Campbell has thrown them out. There was nothing radically new about the process, so I have taken no particular pains to preserve the records. Any competent metallurgical chemist could reproduce them with a few hours' study."

Sydney Smythe's Astonishment

I SWEAR to this day that Sydney Smythe's eyes bulged out a good half inch. He didn't dare to believe his ears, I guess. His voice was well-nigh a squeak.

"You mean—you're going to throw the formula away?" he cried. "You're through with it? You don't want it any more?"

"Why no," Jones answered. "It is no longer of any particular interest to me. The experiment was satisfactory. It bore out some of my theories and revealed new food for thought, but now that it is done there can be no use in dealing any further with it."

"Mr. Jones," Sydney whispered hoarsely, leaning far forward in his chair, "those notes—can—can I have them?"

Jones seemed puzzled. "Certainly," he said, "if they are of any use to you. I left it all, records and samples, in a small wooden box on the third reagent shelf, in the laboratory. You can't mistake it. If you want them, take them."

Sydney and the Notes on Transmutation

SYDNEY hurled a glare at me that should have floored me. There was unholy glee and triumph in it, so much so that I began to lose some of my faith in Jones's ability to keep his ears dry. In a trice Sydney was up and striding to the door of the laboratory. I saw the lights go on, and heard him rummaging around among the glassware. Then came a sharp, exultant cry, and Sydney appeared in the doorway with a small wooden box under his arm.

"I just remembered," he said, "I have an engagement. I must be going. And Abercrombie—remember, he gave me this."

We heard the door slam behind him. Jones twisted uneasily. Toby awoke and stretched out a spotless paw for a dig at the upholstery of the chair-arm.

"James," said Jones, "will you turn off the light in the laboratory. I believe he has left it on. He acted very queerly—very. I hope he isn't ill."

I looked at him quizzically. I had had enough thankless experience in nursing Jeremiah Jones. It was his affair, and I determined then and there to let it remain so.

"I doubt if he is unwell," I said drily. "He was simply in a hurry. He's feeling quite chipper, I should say."

"You think so?" Jones queried anxiously. "I'm glad of that. He is a very nice young fellow, interested in science and quite an enterprising chap, I understand. He should go far. But we were discussing something—"

"Yes," I admitted, "we were. The future."

"Ah, yes—I remember. I remarked that it would be a great boon to the world to be able to predetermine the future. Aside from its philosophical significance, the doctrine of predestination—"

But this is not a story of predestination. I will leave the subject for more relevant matters, namely, the scheme that Sydney Smythe was fostering.

For some time I was unable to get the drift of what he was doing. I knew that he had rented part of the defunct box-factory for some project of his own, and hired a stolid, rather unintelligent looking German, who

spent ten hours of every day there. I had observed that he had become especially thick with T. Paterson Fosdick and the Rev. Henry P. Winters, and that certain others of our leading lights seemed to be enjoying his company. There was a subdued undercurrent of excitement running through the quiet life of our little community. They were like children with a secret society, going around with bated breath and glistening eyes, throwing out little illusive hints that led nowhere. And then Mrs. Fosdick spilled the proverbial beans.

It came of holding two dinner-parties in one week. The Springville Literary Guild was having a prominent novelist around on Wednesday, and a select few were invited to dinner with him. On Tuesday, an even more select if somewhat larger group met with motives unknown. And Mrs. Fosdick mixed her invitations.

I turned up rather late Tuesday evening, and when I came in the whole room went silent. I felt scores of eyes boring into me, wondering what I was doing here. Some instinctive realization that I was in the wrong place made me drop my invitation. With a swoop, T. Paterson himself recovered it, and I saw that he was paler than usual when he handed it back. Right then and there I knew that I was not wanted, but at that moment I spied Sydney Smythe peering nervously from behind his aunt's ample form, and an imp of perversity bade me stalk across the room and greet him heartily. And then dinner was announced.

A Dinner Table Service of Gold

WE went in. One look at that table told me the whole story. The entire table service was of gold!

I knew, and they knew I knew. Conversation lagged and broke down utterly. Men and women who represented the town's financial elite mumbled platitudes and bent over their heavy golden plates, pecking half-heartedly at their food. It was my fault, and it was up to me to do something about it. I daresay my eye gleamed evilly as I turned to poor Sydney and cast my bait.

"Tell me, Mr. Smythe," I said, "is your chemist ready to begin production?"

Sydney went red and white, and his pale eyes goggled in mental agony. T. Paterson snorted into his coffee. The ladies emitted various gasps of amazement. Mrs. Fosdick stared from me to Sydney in sheer horror.

"Mr. Smythe," she cried, "does he know?"

I laughed, and before Sydney could say a thing I made my second cast. "Of course I do," I told her. "I was present when he acquired the rights to the process. Wasn't I, Sydney?"

He choked and took my bait. "Oh, certainly," he stammered. "By all means. Might say that Abercrombie was in on the ground floor, so to speak. He's known about it all along, but he has no faith in the miracles of modern science. He preferred to play safe. And now I'm not so sure we should let him in on it."

"But—he knows," put in the wife of our mayor. "Surely he—he deserves some reward for keeping our

secret so honorably. I—I am willing to vote him ten shares or so if he will invest a thousand dollars with us."

A thousand! This was looking pretty big! Still, I was taking no chances.

"No, Mrs. Selford," I said pleasantly, "I have not changed my mind. I cannot really participate in your wonderful project. But, so that I can be one of you in fact as well as in spirit, I will take one share—just one. That is permissible?"

Sydney seemed relieved. He jumped at the chance. "Yes, yes, that's the best way," he agreed quickly. "We will be honored. Here—you can have a share of mine. Make your remittance to our Bursar, Mr. Fosdick, within the week. And remember—not a word to anybody!"

He handed me an engraved certificate, tastefully decorated in green and gold. "Springville Gold-Synthesis, Ltd." it read. One share—one hundred dollars! That was a real racket! I bowed my appreciation and pledged my utter silence. I accepted the congratulations of my fellow-conspirators. But I kept my check-book where it belonged, at the bottom of my inside coat pocket.

I sometimes wonder what would have happened if things had been allowed to progress normally, as they had started, undisturbed by viler considerations. To one who saw what was really happening, the situation was terribly funny. They were like kittens with wet feet, awkward and helpless and not a little frightened. They made half-hearted little dabs at sensationalism. They "dared" pitifully childish little coups. They were like babes in the wood. And then the wolf came along. Oscar muscled in.

Oscar was the chemist Sydney Smythe had dug up in New York and imported to run the production end of the affair. Oscar was paid a "decent" salary. And Oscar was no fool. He had connections. As a matter of fact, his metallurgical experience was along the lines of under-cover coining. He had scented game, and he was not in the least disappointed in what he found.

It happened just a month after my admission to the circle of the chosen. This time the Rev. Winters was entertaining, and, aside from the inevitable gold service—every member of the group, who had any claim at all to blue blood had one—it started like any other social gathering. Dinner came and went, and with the dessert came plump little bars of heavy, yellow metal, little sample ingots of synthetic gold.

"Our first dividends!" announced Mrs. Fosdick proudly.

Then Sydney Smythe climbed up on his feet with a worried look under his cheerful smirk.

"We have a little surprise to-night," he told us. "Dr. Baum, our production manager, has consented to give us a report. He was unfortunately unable to attend this excellent dinner, but he promised to be here immediately afterward."

Three Suspicious Visitors

A MAID appeared at the door and looked questioningly at her mistress. Mrs. Winters beamed encouragingly. The maid stepped aside.

"Mr. Baum and—and his friends," she faltered.

Three men came into the room.

I knew Baum by sight. I knew the others too, or their kind. They were professional muscle-men, racketeers to the very eyebrows. And I guess there was no one there who didn't know it, except Sydney Smythe and Mrs. Winters. She rose graciously to greet them, but Baum raised a beefy hand in protest.

"Sit right down," he said in a cat-and-canary voice. "The boys and me like to stand up. It's good for the feet. An' I got a couple of questions I want to ask you."

He stood in the doorway, hands in his pockets, feet spread, his twin gorillas backing him up. He beamed down on us like a benevolent uncle, and his tones were suave and silky.

"Who's the treasurer?" he asked. T. Paterson rose.

"No—sit down," said Baum. "I just want to know who's who in this racket." He turned to Sydney, who was fumbling nervously with his ingot. "Prosperous lookin' crowd you got, Mr. Smith," he opined.

"Er—yes," Sydney murmured. It was the first time I ever knew him to fail to deliver his freezing "Smythe is the name!"

"You got a pretty good proposition, too," went on Baum. "There's good money in it."

T. Paterson Fosdick smiled. "We are satisfied," he admitted. "This is not exactly a philanthropic association." He patted his little lump of gold lovingly. "We appreciate our little dividends," he smiled.

"Yeah," grinned Baum. "I can guess it! You don't look much like Santy Claus to me. Listen here—this is a good racket, sure, but I ain't in on it like I should be. I'm the one that's back of it, doin' the real work down in the factory. I want my cut. Sit down!" he bellowed at Sydney, who was fidgeting about in his chair. "An' keep your trap shut till I'm done! You," he jabbed a thick thumb at Fosdick, "what you been doin' with the stuff I turn out?"

"Why," stammered T. Paterson, "we have these handsome gold services, and there are adornments for the ladies. And of course, these little dividends."

"Yeah?" sneered Baum. "What you plannin'? What you goin' to do with the stuff I turn out next month an' the next—all year an' the year after that? What in merry hell are you in this racket for?"

"WE have no definite plans, Dr. Baum," our Bursar said rather plaintively. "This has been a very wonderful experience for us all, and we are a trifle dazed by its splendor."

"You look it!" growled Baum. "You got any ideas?"

"Why, I believe that our local jeweler, Mr. Travis, will be willing to guarantee a market for our output for the next few months, if we offer him a suitable

price. After that, I hope to get in touch with a leading dental supply house, and possibly one of the larger New York jewelers—Tiffanys, for instance. We will have no difficulty in disposing of it, I imagine."

"Difficulty!" bellowed Baum. "Well if you ain't the suckers!" He advanced on the table and slung himself into the vacant chair beside Sydney Smythe. He leaned forward with his elbows on the cloth, punctuating his remarks with jabs of his stubby forefinger.

"Listen," he said, "you ain't got the ghost of an idea what it's all about. You're like kids with a pie that's too big to eat. It's a damn good thing I horned in when I did."

"You poor saps—ain't you got the *least* idea what you're doin'? You're makin' gold, that's what you're doin'! I know gold. I'm makin' it for you, an' I tested it—gravity, color, softness, meltin' point, specific heat, acid test—I know all the tricks. I've had 'em used on me, an' I've used 'em myself before this. It's gold I'm makin' down there—real honest to goodness gold, that'll bring you twenty dollars an ounce in any market! An' I'm turnin' it out by the pound!"

"Listen here. From now on, *I'm* the brains of this mob. An' I got them to back me up, an' plenty more like 'em." His thumb jerked back at the two bruisers behind his chair.

T. Paterson Fosdick rose in righteous indignation. "This is an outrage!" he shrilled, crimson to the wattles. "You are impertinent, sir! You may consider yourself discharged!"

"Yeah?" grinned Baum. "Good with me. An' now you're bounced, an' I got your job. Get me?"

Mr. Foskick's Uncontrollable Anger

I THOUGHT Fosdick would burst. He went almost black with rage. He pounded on the table with his ingot and screamed in a piping trill like a peanut whistle. He demanded that these ruffians be thrown out. He demanded that the meeting be adjourned. He demanded that someone *do* something. Baum jerked his head. The two gunmen clamped down on his flailing arms and jammed our Bursar back into his chair. He stared pop-eyed at the blue-steel of gun barrels. He subsided. Baum took the floor again.

"Listen," he said, "I'm in. Get that straight. An' I'm stayin'. Why, you innocent babies you, you ain't got the guts to play this game right! You're walkin' in your sleep, an' you need a nursemaid. I'm her."

"Try an' get it through your thick heads what you're doin'. You're makin' gold, at about a quarter of what you can get for it. Can you see that? I'll lay you any money you can't see any farther!"

"Listen here. How long do you think you can go on clearin' four hundred per cent on your money like you're doin' now, an' like you're plannin' to do? We're turnin' out twenty pounds a day with the layout we've got, an' we can raise that just as far as it'll go. But it won't go far. In six weeks you'd be in a depression that would make 1932 look sick! An' like innocent little lambs you'd be wiped out."

"Why, without me you wouldn't get to first base. You'd fan out—one, two, three. You're a flock of dumb bunnies, that's all, tryin' to play fox. Well, by Gosh, I'll make wolves out of you!"

"Listen. We could dribble out that gold in little bits an' keep the price up, but we won't do it. We'll turn it out full blast, an' get stuff for bigger batches. We'll make gold as cheap as lead an' cheaper, an' we'll drive the market an' the coinage down to rock bottom."

"There ain't one of you that hasn't got a hundred grand an' more salted away in a sock somewhere. By God, you're goin' to make it talk now! An' I'll write its speeches for it. We'll get the market down to where it can slide under a snake, an' gold to where they make radiator caps out of it. We'll drive the coinage crazy. An' when it's hit bottom, you're goin' to buy—buy stocks an' bonds an' mortgages an' everythin' you can get your hands on. An' at the same time we freeze down on production, an' things begin to look up. You'll make plenty on that, an' you'll buy gold on the side—soak it up an' dump it somewhere out of sight. Make a lot of statues of yourself, if you want to—it'll be cheap enough. But get it out of the way fast."

"O. K. You got the cream of the market. You're in on the ground floor on every money-makin' racket in the country an' maybe the world. An' then you soak up the gold an' freeze on it. What happens? The market goes on risin'. They have an' election, an' prosperity starts comin' round the corner. An' then some guy wants a weddin' ring or a gold tooth, an' there ain't enough gold loose to put in your eye. In just about two jumps we're back where we started, only where a couple of thousand guys had a couple of million apiece before, you got it all between you. You'll be sittin' pretty, an' what you say'll go, what I mean! You can run this country just the way you like it, an' there ain't a man livin' with the guts to call your bluff. Why? You got that gold stowed away where it's safe, an' you can *make* it by the ton without half tryin'."

"I tell you, you'll be king-pins around here! An' when I think of the plans you had, dribblin' it out for teeth an' rings to a hick jeweler—good heavens, sometimes I wonder how such dumb clucks live! It's damn good for you that I got brains under my hat, an' that I didn't decide to freeze you out! You'd be *out*, what I mean, an' that goes for all of you!"

Baum's Speech Is Ended

HERE was a feverish glitter in T. Paterson Fosdick's eye. Money always puts it there, when it's coming in. And I saw it reflected in every eye, at that table, even the fishy stare of the Rev. Henry P. Winters. It was gold-fever, power-fever, and they had it bad! I leaned forward and slipped in a question.

"Tell me, Dr. Baum—just where do *you* come in? What are we paying you for your fatherly guidance?"

Baum grinned fatly and folded his hands over his stomach. "Well," he chuckled, "so there *is* someone with brains enough to ask that! Well, mister, I'll tell

you. I ain't one to gouge a feller, no matter what he's got. Poolin' your money like I said, you'll make a lot more than you or me or anyone would alone. An' since I'm watchin' over it for you, I ought to get a little somethin' out of it, hadn't I? I been thinkin' about it, an' talkin' to the boys here an' their pals. They had the idea we ought to take the whole racket over, but I ain't greedy, an' I kind of like you folks. I tell you—I'll call it quits at forty per cent for me, an' ten for the boys an' their gang. That'll leave plenty for you an' makes me pretty comfortable too. Fifty, forty, ten, an' no arguments. Right?"

T. Paterson's mouth was open to protest, but after one look at the twin mountains behind Baum's chair he subsided. "Right," he murmured meekly. And the rest nodded dutifully.

So there we were, less than three months after Jones had hit on his idea of alchemic research, racketeers on a larger scale than anyone had ever tried to be in history, with a scheme that couldn't fail. I wondered, ironically, whether Jones would be aware of the panic. Like as not he would putter away at some weird new problem and never come to until it was all over and we were the autocrats of the world. It probably wouldn't make the slightest impression on him. It is the innocent fomenters of revolution that come out best in the long run.

We drew up a document of organization and dissolved the out-moded "Springville Gold-Synthesis" for a less revealing and more practical "Twentieth Century Metallurgy." T. Paterson Fosdick insisted upon that. He is a stickler for form, and our new comrade, Dr. Oscar Baum, chose to humor him. I'll wager that he has cursed that concession ever since!

Fate and Mrs. Fosdick closed the deal. She was in high spirits and inclined to be kittenish. Apparently she thought of gold as a sort of super-sealing-wax, for she rallied us all into the kitchen and insisted on heating one of the spoons over the gas—"So that we can seal the compact in gold," she gurgled. I knew that gold melts at better than a thousand degrees centigrade, and that her kitchen range is not going to deliver that amount of heat. So did Baum, apparently, from his grin. I remembered that he claimed to have tested the melting point. In fact, the only one who looked at all uneasy was Mrs. Winters, whose spoon it was, and that was only natural.

Gold is a good conductor of heat, and Sydney very soon took over the job of holding the spoon in the nearly colorless gas-flame with an asbestos kitchen-mitt. The rest of us rummaged around among the edibles and laughed at Baum's crude jokes. I was facing him, with my back to the stove, when I saw his eyes suddenly go cold. With an oath he plunged forward and grabbed the spoon. His head poked forward like some heathen idol's, his face frozen and hard, he held the spoon in the hottest part of the flame. *Beautiful green plumes streamed up from its edges!*

"Is that stuff pure?" he demanded of Mrs. Winters.

Without waiting for her answer he whirled to me. "Gimme that bar!" he shouted. I handed him my "little dividend" and he thrust it into the center of the blue flame. A moment as it heated—and then the result was that same beautiful emerald flame.

Never have I seen a man so furious. He simply stood and roared. The poor women stood open-mouthed, too bewildered to be shocked. He certainly revealed his upbringing then! For fifteen minutes, without a pause, he blistered our ears with the choicest collection of oaths and obscenities that it has been my privilege to hear. I think he invented some of them on the inspiration of the moment. He must have. He waved his arms and stamped and shouted until his face was crimson and his little eyes were glassy and bulging. And when he ran dry, he stood and mouthed soundlessly for a good minute before he could get wind enough for speech.

"**Y**OU damned crooks," he wound up, somewhat mildly. "If you wasn't so dumb I'd have these mugs blow you to bits. You're so damned crooked you throw two shadows. You—you—oh, *Hell!*"

He uttered something like a squeak, spat violently on the floor, yanked open the back door, and fairly ran out, his two frozen-faced gorillas behind him.

He left us in utter silence. I think I was the only one there with any conception whatever of what had happened. They were as dazed as though someone had touched off a bomb in the refrigerator. Mrs. Selford was the first to gain control of her tongue.

"Wha—wha—wha—what *happened?*" she yammered shrilly. I turned to her and bowed deeply. I handed her my beautiful share of "Springville Gold".

"Those emerald flames that you found so lovely, dear lady," I said slowly and distinctly, "are perfectly familiar to every high-school student as excellent evidence of the presence of copper. There was quite a little, I should say—certainly more than 'pure gold' should contain. I am afraid, Sydney," I added, "that you have been over-impulsive."

And I followed the gangsters down the back steps.

I did the obvious thing. I went to see Jones. He was still awake, as I had hoped he would be, and he welcomed me heartily.

"You haven't been here for more than a month, James," he complained, when I was snugly settled in my chair by the fire. "I wanted to talk over my new experiments with you, and the theory of the thing. It is really fascinating—perfectly wonderful! You mustn't forget to come in and help me think it out, often. It's the future, you know—predestination."

"Yes, Jones," I agreed hastily, "but my mind is not prepared now, and I can't stay long. It was something else I came for. You know, you've never told me about your work on transmutation."

He looked blankly at me for a moment, then light dawnd on him. "Oh," he said, "you mean the gold."

"Yes," I admitted, "synthetic gold."

The Secret of the Alchemist's Transmutation

"YES, yes," he exclaimed, "I know. But I thought I told you. It really gave me a remarkable insight into the knowledge of the alchemists, and its limitations. I worked the formula out and tested it, quite easily. It gave a metal nearly as heavy as gold, with about the same color and melting point—a very passable imitation. It was an alloy, of course, and I don't blame them for making the mistake they did. It was really very good. But to our more exacting tests, the falsity was evident.

"I tried a little experiment then. You know, I have always felt that a competent metallurgist could produce in an alloy whatever properties he desired. I tested my theory by doctoring up the old recipe according to our more advanced knowledge, and I was able to secure an alloy that corresponded remarkably well—color, density, ductility, malleability, conductivity, resistance to acids—to all outward appearances it *was* gold. But you could tell from the crystal structure that it was an alloy, and, of course, from the spectrum. Besides, the solution in nitric acid gave mixed crystals of the metals I used—copper and lead and several others, Aqua Regia, a mixture of nitric and hydrochloric acids would not be as effectual for lead as nitric acid would be. And, of course, you could detect the copper in a flame.

"On the whole, though, it was an excellent superficial substitute for gold. I had some in a chalk-box, in the laboratory, but Mrs. Campbell must have thrown it out when she cleaned. She misplaced everything else. It is really unfortunate, for it might have had some commercial application. But I can't bother to

repeat the work now. I have much else on hand."

"Never mind that, Jones," I said. "I think I can locate it for you without much trouble. But I thought, that night when Sydney Smythe was here, that you said you'd made real gold."

"Oh, yes," he admitted, "I did that too. Quite simple, but costly. I used the obvious method—bombardment of mercury with alpha particles to break down the structure of the nucleus. The new G.E. tube made it quite simple, but it is not a cheap process. It has no commercial possibilities."

"That reminds me," he went on. "If you see Mr. Smythe, tell him to stop in. If you remember, I told him he could have the bit of gold that I synthesized, and my notes on the process. I presume he wanted to write some sort of popular article for the papers. I have it here in my desk now. Mrs. Campbell had moved it that night—that must be why he missed it."

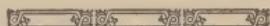
He fumbled for a moment in the desk drawer and brought out a little round wooden box, like a pill-box. Opening it, he handed it to me, and pushed over a reading-glass. Set in the peak of a little cone of black sealing-wax was a tiny globe of bright yellow metal, as big as the head of a pin.

"That's it," smiled Jones. "It cost as much as five pounds of the natural stuff. But it gives all the tests—spectrum and all. It's real gold. Those alchemists were wonderful men, and great scientists, but they hadn't our technique."

He leaned back in his chair and began to fondle Toby's ears.

"Now," he said, "let us consider predestination."

THE END



The Excessive Weight of Vehicles Aluminum in Transportation

IT seems criminal to use a vehicle of a ton or two tons weight to transport a person weighing but 150 pounds or less, or to use a twenty or thirty-ton vehicle to carry perhaps only twenty or thirty people. There is some hope that in the more extensive use of aluminum it will rid us of this grossly wasteful practice—what we may call the inefficiency of weight. A bicycle weighs perhaps one-fifth the weight of its rider. If one were made of aluminum, the ratio would be far more favorable. But it seems almost stupidity that

with such metal as aluminum available, railroad cars and vehicles in general should weigh so much in proportion to the load they carry.

The metal has reached the biblical term of "Man's Life." It is now, we may say, just past its seventieth year in production on a manufacturing scale. Considering its properties, it is definitely certain that there is a wonderful future in it in its use on a large scale. As far as man is concerned, it will never be exhausted, while a very short age is predicted for copper.

The Three Suns of Eve

by *Edwin K. Sloat*

Author of "Beyond the Planetoids," "The Vibration," etc.

THIS story is by one of our best known authors. His work, we are sure, will be greatly appreciated by those of our readers who like interplanetary stories. This one takes us beyond the solar planets to a very distant world. An interesting feature about it is that there is a lot of psychology in it, as developed on this strange and distant world.

Illustrated by MOREY

CHAPTER I

Tricked!

PROFESSOR HUMPHREY took the laboratory key from his pocket and handed it to Neis, our strange, little, dark-skinned man of all work.

"There you are, Neis," he said. "Go ahead and prepare your apparatus. When it is ready call us. Naturally I am quite curious to watch you upset the Theory of Relativity so casually. It is unusual, to say the least, that a scientist permits his house servant such liberties with his laboratory, but you seem to have a smattering of scientific knowledge and this experiment will give me an excellent opportunity to set you right in your absurd argument. Run along."

There was a strange air of triumph about Neis as he hurried from the room. It filled me with a vague uneasiness, for it followed too closely the nameless anxiety I had seen in Winifred Humphrey's big eyes when he made the proposal. Woman's intuition? Call it what you will; she was afraid.

My stealthy glance sought the small, wistful oval of her face across the table and dwelt there in secret adoration. Then I knew that Grant was watching me, and I flushed with anger. It was none of his business if I chose to look at Winifred. She did not belong to him. Or to me either—yet. I turned to meet his flashing, jealous eyes glare for glare, until some casual remark by Professor Humphrey drew Grant into a discussion about our work.

Neis and Grant

THE hour was late. I excused myself and retired to my room for the night. As I turned in I wondered a little why the presence of Neis should suddenly cast a shadow over our little hilltop haven, where Professor Humphrey and Winifred, and Grant and I, his two assistants, worked and lived so happily together.

Happily? There was Winifred. . . . Well, the ring was in my pocket. In a few days Grant would have visual proof that he had no chance.

It seemed to me that I had scarcely closed my eyes when I heard someone tapping at the door. I arose to find Neis standing in the dim light of the hallway.

Neis in Readiness to Perform the Experiment

"I AM ready to perform the experiment," he said quietly, "if you will dress and come down to the laboratory, please."

Hastily I donned my clothes and descended the stairs. I gave no thought to the odd time, which didn't seem so odd after all, due to the kind of work we were engaged in. It was the memory of the fear and uneasiness in Winifred's eyes that filled my mind.

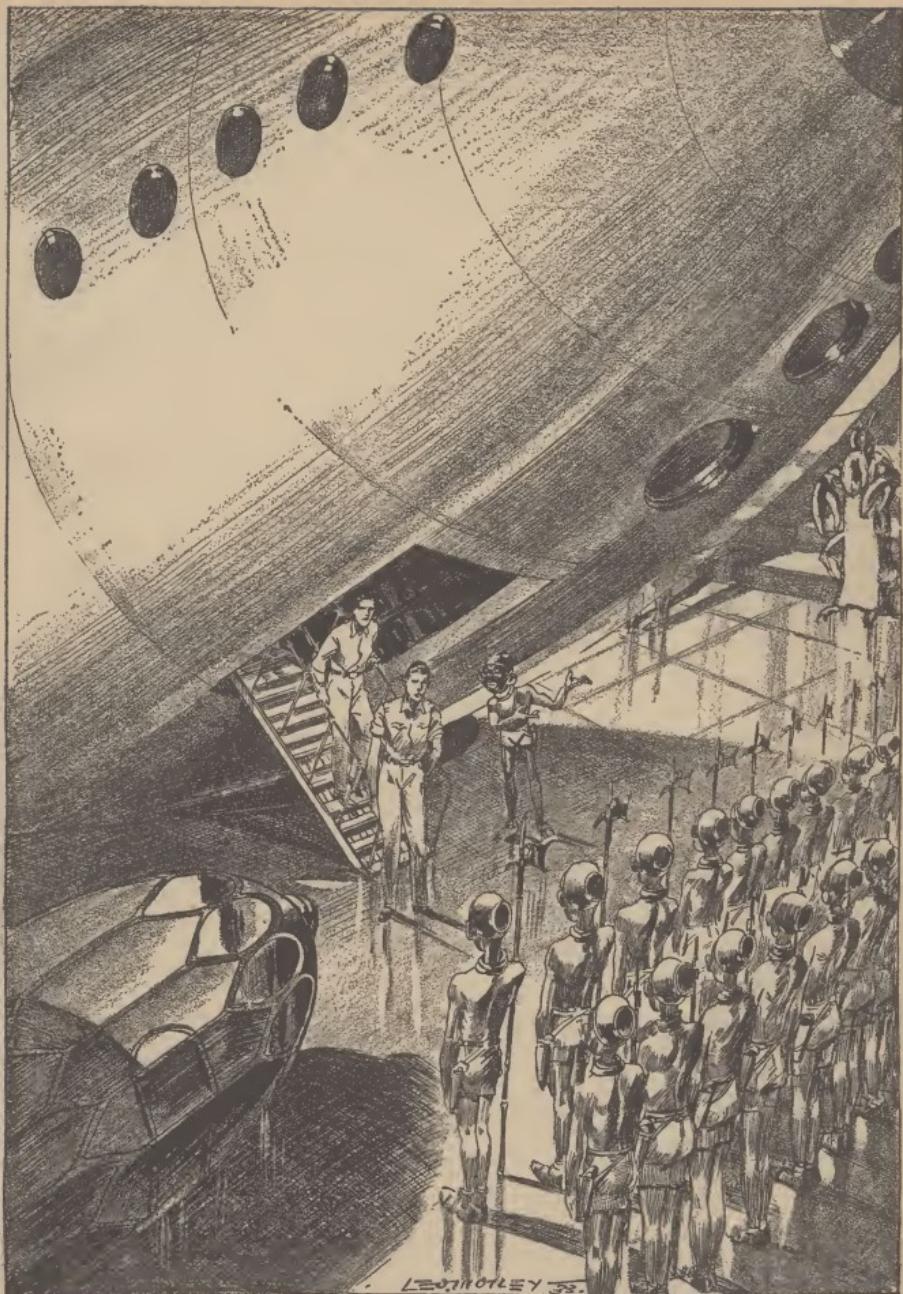
She and Professor Humphrey and Grant were waiting near the observatory-laboratory building when I joined them. The darkness of the night was already lessening in the east where the foothills were silhouetting themselves sharply against the graying sky.

"This way, please," said Neis, and to our surprise led us not into the laboratory, but round the end of the building to its opposite side.

Winifred gasped, and the professor gave a grunt of astonishment. Grant and I could only stare. Could that be a dirigible balloon, that vast thing looming there before us? Something scuttled across the rocks behind me with a metallic scratching. I whirled about and stared. Nothing could be seen in the darkness. Abruptly a brilliant glow burst from the massive thing before us as lights inside it were snapped on, revealing a long, vast, glittering cylinder of transparent crystal.

It lay horizontally in the air, like a vast zeppelin with one end touching our hilltop beside the building. An entrance port in the bow stood open. Neis was beside it, beckoning and grinning.

Winifred shrank back. I gaped in horror at a huge crab-like monster nearly as large as a horse which



LEO MOTLEY 58.

Silently we followed Nei's out to meet our fate, whatever it might be, outwardly calm, but inwardly tense and apprehensive.

crouched behind Neis with antennae waving, and with its popping, beady eyes fixed intently upon us. There were others. We were surrounded!

Professor Humphrey gulped down his amazement and scowled.

"What foolishness is this, Neis?"

"Only a portion of my experiment, Professor. If you and your companions will be so kind as to enter, we can proceed."

"I'll enter nothing! Furthermore, I'm going to break your neck for getting me out of bed at this unearthly hour to witness your horseplay of fakir's tricks. Mass hypnotism, I presume, but I'll have no more of it!"

I glimpsed an opening between the monsters at my left. Seizing Winifred by the hand, I sprang for it. But a monster behind us darted aside with prodigious speed to block us. I swerved. Winifred screamed. Then a huge claw slapped me, like a blow from the flat side of an ax, and I went down.

I opened my eyes inside a roomy compartment in the vast cylinder. Professor Humphrey and Grant were there, nursing minor wounds, and Winifred was holding my head in her lap. In her eyes was such anxiety that in spite of my splitting headache and our critical situation my heart thumped wildly. I smiled at her reassuringly and sat up.

The Looting of the Laboratory

OUTSIDE the cylinder the monsters were scuttling about in a frenzy, looting the laboratory and observatory of instruments, books, tools and records, all of which were being brought into the cylinder.

Everything outside was plainly visible to us through the transparent walls, even the laboratory building forward, and the night sky back of it with its paling stars. Only the inner portion of the cylinder, which extended its full length, was opaque, veiled by smoky-hued crystal.

Our own compartment was bare save for eight or ten low pallets, all fastened to the floor, each with silken sheets and pillows.

Off Into Space with Crustacean Monsters

THE last monster came scuttling aboard with the remaining portion of Professor Humphrey's massive little reflector telescope in its claws. The entrance port slid shut behind it. Instantly there was a pressure against our feet, and we realized, in growing alarm, that this incredible cylinder was rising from the ground.

In dismay we watched our hilltop observatory and home dwindle beneath us in the gray dawn as we floated higher and higher. Presently the golden beams of the morning sun caught us from beyond the distant mountains, and the world below grew hazy, purple and flat.

Professor Humphrey dashed to the entrance panel

of our compartment and thumped madly on it with his fists, bellowing for Neis.

The little dark man appeared presently in the passage outside the panel, grinning blandly. The professor shouted wrathfully for him to open the panel.

"No need to shout, Professor," remarked Neis calmly, his voice coming to us distinctly through the crystal wall. "I can hear you quite well when you speak normally."

"Where are you taking us?" roared Humphrey, purple with rage.

"I doubt very much if I could tell you, since you have no name for our planet," replied Neis indifferently. "It is one of those invisible worlds you term 'dark stars', because it is too far for the reflected light upon it to make itself visible to your astronomers. Our name for it is Ev. It is really quite far from here."

Humphrey gasped. We all did.

At that instant there appeared in the passage a huge, venerable crustacean monster.

"Where is the scientific library, On?" it asked of Neis. "I have watched, but failed to see it brought aboard. All I beheld was a few score volumes such as a beginning student might possess."

I was startled, for instead of using words, the monster made only clicking, grating sounds which in some way registered telepathic thought images on our minds. Before Neis could answer, the monster caught sight of us.

"What sort of mammalian vertebrates are these?" it clicked. "Your cousins?"

Neis pointed at Professor Humphrey.

"There is the knowledge you sent me after," he said nervously.

The beady eyes surveyed Humphrey skeptically.

"How can that be?" clicked the question.

"Locked up in his brain case," explained Neis eagerly. "He is one of the leading scientists of the earth, and worth more than an entire library of scientific treatises. The extraction of that knowledge is up to your psychologists. The man is opinionated, rude and overbearing, but he should offer no problem to your mind-masters."

The Envoy, Neis, Under Fire, Explains

The crab monster was not overly pleased. We could feel the tinge of annoyance in its thought emanations.

"I fear you bungled your task, Neis," it grated. "We send you for a scientific library, and you return with this thing. For general knowledge your vertebrate is, perhaps, better than a specialized library, but for exactness and detail such as we need, its mind is likely to be hazy. We shall hope that I am mistaken, for there is no more time to waste. You were too long on the planet. Why?"

"There was no chance to get in touch with you sooner," said Neis anxiously. "You were right, of course, in judging that your superior selves would have

no chance of getting what you needed without terrifying and antagonizing the inhabitants of the earth with your appearance. But I fared no better. I am of the same structure as themselves, but because of my dark color I was promptly mistaken for a member of an inferior earth-race, and as such had no chance to get into any laboratory and signal to you. It was only tricking this vertebrate scientist into a foolish argument over an ancient and well-known fact that I managed to gain the use of his laboratory and set up the signaling apparatus to call you. Otherwise I should still be stranded back there on earth."

The monster indicated Grant, Winifred and myself with a questioning gesture of its claw.

"They are merely three other vertebrates who chanced to be with the scientist," explained Neis with obvious relief. "The female is his daughter. She should make a welcome addition to the Keron's seraglio, since none of his hundreds of concubines have a white skin like hers. The two young males, who both wish to possess her, are merely assistants to the scientist. I thought it best to bring them along."

The crustacean made no comment. As it scuttled away along the passage, Neis busied himself at a tiny control board in the crystal wall near the entrance panel.

I turned away, for my wondering eyes were irresistibly drawn to the vast curtain of eternal space unfolding about us.

Suffocated and Unconscious by the Action of a Gas

Winifred gave a strangled cry. I whirled around. She was clutching her throat and swooning. As she collapsed, Grant and I caught her between us and laid her on one of the pallets. A strange, sweetish odor was filling the compartment. I gagged, coughed and strangled. Grant, too, was doubled up in a paroxysm of coughing. Professor Humphrey had already fallen across one of the pallets. My head was swimming, and a dull sluggishness was weighing me down. Some sort of vibration was dimming at my nerves.

Dimly I saw the star-dusted velvet of the abyss blurring and distorting through a thickening film of frost now forming on the crystal wall. An iron, cold, as though from interstellar space, was numbing my limbs. My last glance beheld the evil, grinning face of Neis at the panel. Then a wave of darkness blotted him out.

CHAPTER II

A World with Three Suns

SHOOTING, darting pains. Red-hot needles playing on the flesh. An iceberg thawing, with trickles of water running through it. Horrible, endless nightmares. And I realized that I was awake. The stiffness and pain of trying to move were intolerable. I must have slept in a frightfully contorted posi-

tion to suffer so, I thought, and lay long before I attempted to move again.

At last I made another trial, and sat up with a groan. Memory rushed back. I twisted about anxiously and stared at Winifred sleeping on her pallet nearby.

She was breathing feebly, and the weird, gray color of her face alarmed me. I reached stiffly across the space between our pallets and touched her cheek. It was icy cold, and was covered with an impalpable coating of fine dust.

Thoroughly frightened, I fell off my pallet, trying to get to her, and lay helplessly on the crystal floor, staring down into the bottomless depths of space at the galaxy of flaming suns that were like winking, colored jewels.

As I struggled up again, I saw that Winifred's breathing was more normal. Some faint echo of the torture of my own awakening was reflected in her face. Reassured, I turned to Grant and Professor Humphrey. Both were near to waking.

Crimson light that streamed back from the bow of the space ship claimed my attention. I stared and gasped in admiration. Lying far ahead of us in the void was a brilliant, crimson sun that shot its fiery streamers far into space. It was stupendous, overpowering. In what portion of the heavens could there be such a star?

Far from the Earth and in the Stellar World

FAMILIAR as I was with the constellations, I could recognize none of them here. I ogled in wonder. Was that a spiral nebula? It could be nothing else. And visible to the unaided eye! How far, how vastly far, we must be from home. Vainly I stared aft, trying to pick from the pinpoints of light, that strewed the ebon curtain of space with glittering dust, the single point of light that was our sun, our yellow, stunted dwarf of a star with its family of planets and our own beloved earth.

There was a movement behind me. I turned. Grant and Professor Humphrey were on their feet, staring in awed silence at the mighty crimson sun. Winifred was beside them. Presently she turned and gazed at me with a tremulous smile.

We were standing thus when Neis appeared in the passage. From his haggard appearance I gained the impression that he, too, had been in the same kind of a sleep, that we had experienced—as, indeed, he had.

"Our arrival will be a great event!" he exclaimed. "My people, the Ons, have talked of nothing else for years, I suppose, and even among the Thaks, the great crustaceans, it has doubtless become a legend."

Professor Humphrey stared at him oddly through the sound-transmitting, crystal wall.

"You say this planet of yours is a long distance from earth," he said. "Just how many hours have we been on the journey?"

"I can't tell you that, Professor, but, computing it roughly, earth time, about four hundred years."

"What?" exclaimed the startled scientist.

"You have slept," explained Neis. "Not in the sense that you know sleeping, but with animation suspended and sustained by the eos vibration, and your bodies frozen solid to prevent the slightest ageing or decay, you have passed through that period of time."

For the first time since I had known him Professor Humphrey had nothing to say. I believe he was just beginning to believe the incredible things that were happening to us. He ran his fingers aimlessly through his bushy hair.

"I should have thought that there were inhabited worlds nearer to yours than is our earth," he mumbled.

The Inhabited Worlds of Cosmic Space

"PLenty of them," Neis assured him. "But your earth and our Ev are of about the same size and density. Their atmospheres are of practically the same composition. Life on both planets has evolved much along the same line. That is why the Thaks selected your world. They reasoned that science on your planet must have evolved somewhat as ours has, and for that reason you could help us solve our great problem, if it is solvable. I am still convinced that a single, trained scientific mind brought to bear at the scene of the problem will aid us more than all the scientific libraries we could have brought."

Professor Humphrey seemed strangely older. Perhaps it was the shock of suddenly realizing that all his acquaintances and the generation that looked up to him with the respect due a great scientist were dead and gone these four centuries.

"What is this problem confronting your people, Neis?" he asked quietly.

Neis swept his arm about in an expressive arc.

"The three suns of Ev," he replied dramatically. "They are tearing our world to pieces!"

Professor Humphrey gaped at him a moment, then laughed, a short, hard, bitten-off sound. Winifred, Grant and I stared. Neis paid no heed. Earnestly, eagerly he was explaining.

The Three Suns of Ev—a Triple Star

"OUR three suns comprise what you astronomers of earth might call a triple star. They are Mal, the big crimson sun shining ahead of us there, Xol, the huge blue sun that is off to the left of us now and is hidden by the opaque portion of the ship, and Thov, the yellow dwarf of a sun that is just coming into view there below our feet.

"Our planet, Ev, hangs spinning in the triangle formed by the three, and the three suns revolve slowly around it.

"For untold millions of years the resultant of the forces of the triangle was in equilibrium. Then the giant blue Xol, with his superior gravity pulled little

Thov slightly toward him—or so the older school of scientists claim. At any rate Thov has for some reason or other gotten out of place and has upset the delicate balance of our system.

"Ev has begun to swing back and forth a trifle. Either the conflicting pull of the three suns, or atomic disintegration set up by the spinning of our planet in a new and unknown electrical field created by the changed positions of the three suns—these are the two principal schools of scientific thought about the phenomenon, and they have nearly caused civil wars both among my people and among the Thaks—is the cause of the threatened destruction of our world. Violent temblors, increasing volcanic activity and enormous, erratic tides have been hinting at our approaching doom."

Professor Humphrey laughed harshly.

"I am deeply honored, I see, to be the one man from earth selected for this simple task of setting things aright in your peculiar solar system," he observed bitterly.

Neis stared at him with sudden terror in his eyes.

We were nearing Ev swiftly, and soon pierced its atmosphere that was like an ominous red pall of volcanic smoke and dust under the great crimson sun. The four of us knelt down and gazed through the transparent floor at the strange, passionate, red beauty of the world below with its winding rivers that seemed to flow with blood, and the mighty, fantastic crimson forests sprawling all across the lands, with gleaming, red highways threading through them and bordering the purplish seas to tie together the grotesque cities that were carelessly flung here and there.

After a time patches of blue shadow could be seen here and there on the hilltops, shadows that grew and mottled the crimson ground, until it changed to a deep purple and then faded into a fierce, ghastly blue, as mighty Xol, sweeping up over eastern horizon, began his brief rule by changing the alluring red world into a stark, nightmarish place.

Grant drew his hand across his eyes.

"What a madhouse of a world to come to," he muttered.

Xanakon, the Capital City of the Nation of Thaks

LONG before we arrived at Xanakon, the capital city of the crustacean Thaks, we were aware that a mighty celebration was already in progress there. We knew, too, that in Xanakon the Keron, the dissolute, hereditary, powerless ruler of the subjugated, dark-skinned Ons, had his palace.

Small crystal ships flocked in from over the horizon and swarmed about our huge craft as we sped along. They were filled with Thaks who studied us through curious double-lens reading glasses a foot or more in diameter. Doubtless the monsters were in constant communication with the Thaks aboard our ship.

The City of Xanakon and the Lublathon Ocean

WE were freshly bathed in one of the deep pools of sea water aboard our huge ship in which the Thaks whiled away so much of their idle time, when we came at last to the huge city of Xanakon beside the blue Lublathon Ocean, an ungainly metropolis which sprawled across the low land beside the sea and rested its Thak quarter on the cliffs high above the lower city. Thov, the amber-flamed sun, was now filling the world with his nearly white light.

Off to the north three volcanoes spewed great clouds of smoke and ashes into the air. Neis, who was standing with us, eyed them uneasily.

"They weren't in existence when we left," he muttered. "The situation must be far more serious than I feared."

The great space ship swung about over the lower town, for all the world like a big dirigible balloon back home on earth, and the subjugated Ons, like bees in a hive, swarmed out on their roofs and blocked the streets to wave and shout frenziedly up at us. We could hear nothing of the cheering, for the outer walls of the ship were sound-proof.

Then our huge ship floated toward the cliff where the Thaks had their government buildings and palatial estates. We hovered over the vast, domed, council hall, and settled down until the bow touched the marble plaza before the main entrance.

Silently we followed Neis out to meet our fate, whatever it might be, outwardly calm, but inwardly tense and apprehensive.

CHAPTER III

The Death Sentence

A SCORE or more of venerable monsters were awaiting us. I was a trifle surprised that there was no crowd of spectators, but it was evident that the teeming Ons of the lower city were not allowed up here—only Ons guardsmen—dark, lean little men with swords and slug guns, who stood rigidly at attention, eyeing us with curious side-glances.

We halted in the center of the plaza, and Neis advanced alone to confer with a Thak which wore about the base of its big claws bands of gold inset with rubies. Presently Neis returned to us. His face was gray, and in his eyes was more than a hint of panic and fear.

"Professor Humphrey, you are to go at once to the Council Chamber where the psychologists are already assembled," he said hoarsely. "I am to accompany you. You other three will be taken around behind the building to the open prison yard for the present."

"What is the matter?" cried Winifred.

Neis gulped and glanced over his shoulder at the waiting Thaks.

"Conditions are alarming," he said hurriedly. "For years now the Thaks have held their space ships in readiness for instant flight. Had we been a year—

perhaps but a month or a week—later, we might have come too late. Everything now depends on Professor Humphrey. Come."

Professor Humphrey Is Taken Away to the Council Chamber

PROFESSOR HUMPHREY turned to us. In his eyes was a look such as I had once seen in the eyes of a doomed man mounting the gallows, but he remained grimly silent. He gripped Grant's hand and mine, kissed Winifred tenderly, and marched away without a backward glance.

Winifred cried out, and Grant with a curse started after him in a hopeless, suicidal rescue attempt. I caught his arm.

"Not that, Grant," I said a trifle unsteadily. "Winifred needs us worse than ever now."

He scowled, but said nothing. Half a dozen armed guards marched us round the building with its marvelous beauty of carved stone and brilliant flowers to a big prison yard paved with stone and enclosed by an iron fence. We were thrust inside and the massive gate locked behind us.

Winifred burst into tears. Grant glared at me sullenly, then turned away abruptly, and began to make a search of our prison. I joined him.

"Why don't you go and comfort her?" he asked bitterly.

"I think she would rather have her cry out alone without either of us to annoy her," I answered.

He mumbled something I could not catch.

"Besides," I continued, "we've got to find a way to escape from this hellish prison yard and take her with us."

"A lot of good that will do," he sneered. "How will we get back home?"

"They want Winifred for this black Keron's harem," said I evenly. "We've got to save her from that—escape out into the open country. Then we can plan some way to rescue Professor Humphrey."

He gave me a grim look.

"Of course," he agreed shortly.

A quarter hour's search proved to us conclusively that escape was out of question. As we returned to Winifred and sat wearily down beside her, the stones heaved up beneath us and settled back. An ominous rumble filled the air.

An Earthquake—One of Many Temblors That Are Felt on the Planet

WE started up in terror. A long jagged crack several inches wide had opened in the prison yard almost beneath our feet. Violent as the 'quake had been—back home on earth it would have thrown people into a wild, senseless panic—no shouts, cries, or other evidences of excitement came from the lower city. Outside the fence the guards seemed unaware that anything extraordinary had occurred. Hundreds of

such temblors, thousands of them, had numbed their nerves.

As we seated ourselves again Winifred heaved an anxious sigh.

"I wish Daddy would hurry up and come," she said.

Neither of us answered. Grant must have been thinking the same thing I was: that we would never see Professor Humphrey again.

The unnatural stillness continued. It was as though the entire populace of Ev were tense and waiting—a taut, electric silence that conjured up visions of silent, fearful crowds in the streets and homes waiting for news, waiting for word from the vast council chamber where the crustacean scientists worked with the lone prisoner from earth, from whom they hoped to get the secret of saving Ev from its three suns.

In the east the pink sky heralded the coming Mal for his third of a day's reign in crimson majesty. A titanic, convulsive heave of the ground pitched us forward on our faces. A thunderous crashing sounded behind us, as half the rear wall of the vast council hall collapsed. The guards outside the fence were thrown down. As they struggled to their feet, shouting in terror, a second, more violent 'quake hurled them down again. In the distance one of the volcanoes dissolved in a mighty cloud of steam and smoke, that flashed with stabbing swords of yellow light and shone a ghastly red under the rays of rising Mal.

At Last the Great Earthquake Is in Action

FROM the lower city arose the shrieks and wails of the injured and dying. Then came a roaring, far out to sea, as a gigantic, ravening tidal wave reared itself up from the ocean depths and hurled itself on the stricken, gasping city, then rushed back out to sea again, carrying struggling drowning thousands to their death. A smattering of Thaks must have been caught by that wave, but not many, for the Thaks had withdrawn to the cliffs with their waiting space-ships near at hand.

White and shaken we sat up, not knowing what to expect next. Terrified Ons, servants in the palaces of the Thaks, came fleeing past in aimless terror, some even running headlong into the iron bars of our prison yard fence, picking themselves up heedless of blood and bruises and resuming their panic stricken flight. Here and there scuttled a huge, excited crustacean.

The prison gate clanged behind us. Winifred cried out and started up eagerly, then sank back. Neis lay a-sprawl on the hard stones inside the gate, where he had been flung by the guards. As we hurried to him we saw that one arm had been badly mangled by the claws of a huge Thak.

"Where is Professor Humphrey?" demanded Grant.

"He failed us," replied Neis stoically, heedless of the pain of his injured arm. "The psychologists placed him in the cataleptic sleep and probed his mind.

They found nothing of value; he had no knowledge or ideas with which to combat the suns. They probed deeper in their frenzy. And all the time, torn between anxiety and fear, I hung about near the great slab, watching him. After a time Alakus, chief of the Thaks, stared directly at me.

"They are primitives, these earth vertebrates," he said. "We shall not even bring him back to consciousness. You have failed us, Neis."

"I fell down on my knees and begged for the privilege of drinking the fungi. Alakus caught my arm in his great claw and was about to pinch it off, but he changed his mind. Instead, he gave the permission to drink, then ordered me to be thrown into the prison yard, to lie there until the slow death claims me. Professor Humphrey is dead. I shall be soon. It is all over."

The Death of Professor Humphrey Is Announced

WINIFRED cried out, a tremulous, despairing wail that wrenches my heart strings, and fainted dead away. As I eased her down to the ground, I realized that Grant had Neis by the throat.

"Stop!" I shouted, springing up.

"He killed the professor with his hellish plan!" sobbed Grant as he jerked the helpless, strangling Neis savagely about.

I struck desperately at Grant's wrists, breaking his grip. Was it a flicker of gratitude that shone in the staring eyes of the little man as he collapsed? I caught but a glimpse, for Grant, cursing wildly, turned on me. I flung my arms about him, pinioning his own arms to his sides.

"Steady, Grant," I panted, our eyes a scant six inches apart. "Professor Humphrey is dead—Heaven help him—but another murder will not better us. Neis is doomed anyway. Save your strength. You will need it—Winifred will need it!"

He relaxed sullenly.

I glanced again at Neis. There was no mistaking the gratitude in his eyes. Doomed to die though he was, he, like any human of our own far distant earth, was thankful for the little respite, I had gained him, from Grant's choking fingers.

Winifred sat up weakly and smiled at me. She seemed not to realize our desperate plight. Even the death of her father was thrust into the background of her mind for the moment.

Grant saw the smile, tore his eyes from us in a sudden torment of jealousy, and turned to Neis.

"What do you mean when you say 'drink of the fungi'?" he forced himself to ask the little man calmly.

The Drinking of the Fungi

ONES and Thaks alike who are doomed to die are sometimes permitted to drink the spores of white fungi in solution," answered Neis through set teeth, for the first agony of his fatal potion was upon him. "Nothing can save the victim. The fungi slowly eat him.

Death usually occurs after about ten days of your earth time. Sometimes much sooner."

"Poor man," murmured Winifred, as he squirmed in agony with beads of sweat standing out on his dark brow. "Is there anything we can do to ease the pain?"

Neis stared at her. The convulsion was passing. In his eyes was an awed wonder.

"You who are to be a slave of the Keron feel sorry for me, who stole you and brought you here?" he asked in bewilderment. "What strange, unbelievable marvel is this?"

Grant's face contorted with rage. He would have completed the job of killing Neis then and there, if I had not stopped him. There was about Winifred's small, wistful face a poignant, spiritual beauty as she replied:

"Among our people on earth, Neis, we have a saying that comes down to us from One Who was being persecuted unto death. He was speaking to His Father, who is our God, and, although in great agony, He pleaded for His tormentors, saying, 'Forgive them, Father, for they know not what they do.' That is the way I feel about you, Neis. You have done us all a great wrong, have been the cause of all our deaths, but you didn't realize that you were doing it. And it has cost you your own life. I forgive you, Neis."

"I don't!" shouted Grant, surging forward in spite of my clinging efforts to hold him back.

Neis paid him no heed, for he was wrestling with a new and startling idea—that of forgiveness—something utterly foreign to his own life.

CHAPTER IV

"A Thin, Desperate Chance!"

THE sky was growing darker. I glanced up to behold a great cloud of smoke and dust from the exploding volcanoes spreading across the heavens and slowly obscuring the bloody light of Mal. Underfoot the ground was vibrating as though a terrific diastrophism far down in the bowels of the planet was slowly and relentlessly tearing it to pieces. It is the process or processes by which the earth's surface is changed, producing ocean beds and mountains and other cosmic features.

Suddenly there burst on our ears a strange, terrified squawking, and out of the crimson murk burst a cavalcade of four-legged ostriches, or something very like them, running in pairs, tandem fashion, and carrying between each pair a closed sedan, or covered chair. They drew up with a fearful racket at the prison yard gate.

Out of the sedans sprang a company of armed men, headed by a veritable giant of a captain who peered through the bars of the gate and saw us, then began to shake the gate and bellow for the guard.

"Keron's men," muttered Neis. "They have come for the girl. No danger is too great, or occasion too important to cause the Keron to forget a new and beau-

tiful slave. Don't try to stop them, or they will most certainly kill you."

Grant and I paid no heed. Frenziedly we sought for weapons in the barren prison yard. One of the guards shattered the lock of the gate with a slug gun, and the rest swarmed into the prison yard.

The Combat with Keron's Men

GRANT found a broken iron bar in the fence, and I managed to wrench a loose stone from the paving. We charged the guardsmen. Grant's bar whirled down, smashing the skull of the foremost man. My stone saved Grant from death at the hands of the second.

We heard Winifred scream. The huge captain had caught her up, flung her over his shoulder, and was running out of the prison yard in spite of her frantic efforts to free herself. Then we all went down as the ground heaved convulsively with a new 'quake. Slug guns were crashing, but their missiles went wild of us.

Next instant the panic-stricken guards were racing out of the prison yard after their sedans which were vanishing in the red murk with the birds squawking terribly.

We plunged for the gate. Neis rose up in our path and halted us. Grant drew back his fist, but checked himself in amazement. I could scarcely believe my ears, for of all the marvels that had befallen us on this astounding adventure here was one that outshone them all, this unbelievable change in Neis.

Who can say whence it sprung? From my saving of his life a few minutes before? From Winifred's sweet forgiveness? From some incredible change within himself? Who can say? Whatever caused the metamorphosis, a strange, new Neis was speaking.

A Chance to Escape and to Return to Earth

"**T**HIS special space ship," he was saying eagerly. "It is still moored at the side of the Council Hall. The Thaks are boarding their other ships. The special ship will not be taken because the provisions are exhausted and fresh water is needed. It would be certain death to——"

"But Winifred!" I broke in hoarsely.

"I know, I know. You will have to rescue her from the Keron's seraglio—a thin, desperate chance. There will be the hubbub and flurry of boarding his ship, and you may succeed. I shall show you the way, but I can help but slightly in a fight, for the fungi are at work, and my one arm is nearly useless."

Grant and I seized him between us and dashedpell-mell out of the gate and off through the deepening, crimson murk of dust and smoke, across the wrecked grounds of beautiful estates and winding marble roads, till we came to the edge of the cliff overlooking the raging Lublathon Ocean.

At our feet a narrow stairway supported by two

spidery steel cables dropped down fifty feet into a vast hanging garden that still clung to the side of the cliff above the ocean. Through the red murk we could see overturned statuary, urns and huge flower beds all coated with the red, descending snow of volcanic ash.

Neis collapsed at the head of the stairs, his thin body knotting itself in the agonies of a fresh, stronger convulsion.

"Go on down!" he gasped. "Follow the main pathway through the garden and you will come to the harem. The women may be out in the open now, and the girl should be among them unless she has already been taken aboard the space ship that floats above the palace. Be careful; the guards will shoot you on sight. Bring her back. Hurry, hurry!"

He literally forced apart his pain-locked arms so that he could give us the swords of the two slain guards in the prison yard which he hugged to his chest.

Down the narrow, quivering stairway we plunged, at times swinging out over the savage, crimson water we could hear thundering two hundred feet below, at the bottom of the cliff, and back again over the garden still hanging tenaciously by its massive girders and cables, in spite of the terrific 'quakes that should have shaken it into the ocean long before this.

The Escape Is Carried Out

WE leaped from the bottom step and raced desperately along the wreckage strewn walk until the frightened screaming of women and hoarse bellowing of guardsmen just ahead in the mist warned us that we were near the harem.

We slid to a stop, straining our ears. What strange, unfamiliar dangers lay just ahead, we could not guess. We must plan something, anything! Then out of the murk burst a slender girl in robes like ours, an escaped prisoner fleeing for her life. Winifred! She saw us and screamed a warning. I stared in horror at a big, black, pot-bellied eunuch hard on her heels with upraised knife. We could never reach her in time.

Then I realized that I had hurled my sword, saw it leave my hand in a whirling red blur of speed, saw the flat of the heavy blade strike the ugly pot belly with a terrific slap. The eunuch stumbled and fell.

With Winifred between us Grant and I were racing madly back toward the stairway with the thud of pursuing feet in our ears. A back-flung glance revealed the huge captain of the guard and a dozen men a scant hundred feet behind us. We spurted frantically, gasping and coughing as the acrid dust and smoke bit at our throats. Every instant I expected to hear the deadly crash of slug guns, but our pursuers held their fire, doubtless fearing that they might kill Winifred.

Would the stairs never appear? Then Grant shouted wildly, and the next instant we were pounding madly up the steep steps to the top of the cliff. Hard behind clattered the pursuit.

Winifred was ahead, Grant next and then myself.

Suddenly I stopped and turned back. I could delay the pursuit a little while. If only I had my sword! But Grant thrust himself past me down the steps. I tried to stop him.

"No you don't!" he gasped, as I clutched futilely for his sword. He broke free and gave me a shove upward. "Get up there where you belong."

His eyes were dancing as he swung high the sword, its bright blade flashing crimson in the red light. Winifred above us cried out in protest. Then I glimpsed slug guns in the hands of the guards below.

Grant saw them, too. Down the steps he plunged straight at the bunched Ons. The huge captain lunged up at him. Grant managed to duck back and escape the deadly point. Then a mighty, cleaving blow from his own blade sheared down through the snarling black face, and the captain died before his collapsing body struck the steps and slid out under the cable to drop into the sea.

Grant whooped in joyous triumph. Again and again his ruddy sword clove and stabbed among the milling, screaming guardsmen. A slug gun crashed. The missile struck fair. Grant clutched the cable to keep from falling. He turned and looked up at us. There were triumph and reckless gladness in his blazing eyes. He swung high the keen, heavy blade and struck down through the right-hand supporting cable of the stairway.

The steel parted with a snap that nearly threw me into the ocean. The stairs now hung crazily by a single thread, and Winifred above me clung desperately to keep from falling. Keron's men struggled madly to get down into the safety of the garden again. Slug guns crashed anew. Grant jerked oddly under the impact of their fatal bullets, but steadied himself grimly. Again the bright blade whirled down.

The Fate of the Guardsmen

THE remaining cable snapped in two. The guardsmen fell, screaming wildly, missed the edge of the garden, and went hurtling down into the turgid, lashing waves far below.

Grant still clung to the broken stairway, clung with grim, deadly determination. I can see him now—I shall always see his glazing eyes in the pale face staring up at me against that dull, ominous, red background of the murky sea below.

"Hang on, hang on! I'm coming!" I cried frantically, and started down to help him.

He shook his head and smiled weakly.

"Go back—to Winifred," he gasped. "Luck—happiness—good-by."

He stared up past me at Winifred, his eyes aglow with their message of unspoken devotion. His hand waved a brave, weary gesture of farewell. Then he deliberately loosened his hold. Down he plunged toward the ravening waves, and the red cloud that overlay them swallowed him. Winifred's sob came down to me as I hung there, straining my eyes vainly for

another glimpse of him. The supreme sacrifice for Winifred, for me had been made. . . .

CHAPTER V

Cataclysm

WHITE and exhausted from the fearful climb up the crazily swinging stairs, Winifred and I clawed our way to safety on the top of the cliff. Neis lay in a pain-twisted heap on the ground, his drawn face the color of pink putty from the untold agonies of his living death. Yet at the sight of us his eyes lighted up with fire of deathless determination to win this last fight of his life—this strange battle that two strangers from another planet might live, even though he himself was hopelessly doomed.

He could not walk, so I caught him up in my arms. Through the deepening murk and the wild, thunderous roaring we ran. Across the wrecked estates, back, back to the great Council Hall. Beneath our feet the ground was now heaving with ominous regularity.

With Winifred helping me we came at last to the wreckage of the prison yard and the vast, ruined bulk of the Council Hall. Round it I staggered half wild with fear, lest the great space-ship should be gone—it was almost inconceivable to think that it would not have been taken by some of the refugees.

Winifred cried out with joy when we saw it waiting there grim and majestic, its nose almost against the rubble of rock that had once been the wall of the huge building, and the entrance port a scant yard above the ground. Neis, who was again recovered, ordered me to let him down. He hurried to the ship.

There were scratches in the crystal about the closed entrance port, showing that someone had tried vainly to get into the ship.

"The Thaks took care of all their own," said Neis, as he wrestled with the hidden mechanism of the lock, presently opening it. "Ons, my people, must have tried to get in here. I wonder where they are now?"

He glanced about anxiously, but the lowering, lurid pall revealed no one.

A mighty explosion, a cataclysmic reverberation seemed to shatter the universe. The ground rocked wildly. Then it settled a full foot. A sudden quiet, a menacing, deadly stillness gripped the world like the breathless instant before a storm.

Entering the Space Ship for the Escape

NEIS struggled frantically to his feet, tugging feebly at Winifred and myself.

"Into the ship! It is upon us!" he screamed.

In a panic I seized Winifred bodily and threw her aboard. Neis tried weakly to catch the edge of the opening, now nearly six inches above his head. I caught him up with a great heave that sent him sprawling inside the craft. Then I leaped upward desperately, for the ship was far above my head. My fingers hooked precariously over the lower edge of the

entrance port. I hung there, struggling futilely to get up. Winifred caught my wrist and tugged frenziedly—a mighty effort to throw my foot up and catch it inside the port. Done! Another frantic wrench and I was inside. The port crashed shut behind me as Neis fell on the closing lever.

An instant later we were pinned to the deck, powerless to move as the mighty craft groaned under the terrific outward thrust of gasses from the exploding planet, that hurled us upward with rocketing velocity.

I held my breath. Would the heated gas and lava from the interior of Ev melt our ship? Agonized moments crept by.

Fierce white sheets of flame, huge palpitating blobs of molten rock reached for us vainly. A mighty white-hot boulder, larger than a skyscraper, hurtled up out of the depths, almost grazing us as it shot past. But no sound came to us through the crystal hull. Only our straining eyes brought to our brains the stupendous event that was taking place in the billowing, tortured clouds of dust, steam and molten rock below us.

Neis gave a cry. The pressure was lessening, and he wanted to go up to the control room. I staggered to my feet to help him.

With Winifred assisting me, I brought him to the control board in the navigating room on top of the ship. He seized a small silver wheel and whirled it.

At once the pressure on our feet increased. Outside the ship the tortured layers of dust shot downward past us. Neis was hurling the ship out of the maelstrom of the exploding, disintegrating planet. With startling abruptness we shot out into empty space, where the light of all three suns struck us full.

Neis at the Control Board of the Space Ship

NEIS sagged against the control board, his clenched fists beating an agonized tattoo against it as he slid down to the floor, stricken anew with the horrible agonies of his living death, a torture that drove the teeth into his lower lip until a great drop of blood trickled down his chin, but failed to quench the indomitable fire of his eyes.

Winifred averted her head. I brought her an ornamental drinking bowl filled with water from the big bronze tank at the side of the room. He gulped it down greedily. The attack was passing. Suddenly he pointed out of the window at a tiny cloud of light points far to our right.

"Space ships of the Thaks, carrying the nucleus of the new nation of Ons that will be slaves on the new planet," he said somberly.

"Where is this planet and what is its name?" I asked eagerly.

"Larek is our name for it, and it is many years' journey from Ev. I don't believe it is visible to your earth astronomers even with their most powerful telescopes. Larek is much younger than either Ev or your earth. It is covered with vast fern forests in which live mighty bellowing monsters that wallow in the

mud and lay eggs. It has but one sun, which may be known to your astronomers as a fixed star."

"But we are not following them!" I exclaimed in sudden apprehension.

"It would be of no use," said Neis wearily. "This craft is not provisioned for the journey, nor is the water supply sufficient. At best there are about two months' food and water for the two of you here, and, even if you could in that time overtake the Thak ships, the Thaks would not let you aboard, because they would believe that you are Ons, and of them they have enough. The Thaks might even pause in their flight to destroy you."

I stared back at the monstrous, swirling cloud that was all that remained of Ev.

A Planet Is Not to Be Thought Of

BUT surely there is some other planet nearby." He shook his head.

"None nearer than nine years' flight, and it is frozen, waterless and airless."

This mighty crystal ship was to be our tomb.

I turned to Winifred and read weary resignation in her eyes. We had come through Grant's death and the struggle back to the ship just for this—this lonely death in this great, empty cylinder. Far better that we had died quickly back there with Grant, or had been snuffed out in the explosion of Ev. Unreasoning anger gripped me. I whirled furiously on Neis.

The sight of his dark face graying to a dirty pallor, and the retching of his pitiful body in fresh agonies, halted me. A great pity swept me. After all, he had done what he could, all that anyone could possibly have done. He had helped save Winifred from the brutal Keron, and had at least given to her and myself a place to die in peace together. And all this he had done in spite of the indescribable agonies of approaching death. Ashamed of my anger, I brought him fresh water to drink.

After a time he got unsteadily to his feet and moved weakly back to the rear of the control room, pausing in front of a big metal chest that was built into the wall. Sliding back the bolt that fastened down the lid, he opened the chest and beckoned to us.

We stared into it curiously. There were two huge crystal balls, one in either end that nearly filled the chest. A narrow tube of crystal connected these two balls, and encasing the crystal tube was a great number of tiny electro-magnets, connected by gold wires to a tiny switchboard.

One ball contained a big spool wound full of the finest of metal tape. One end of this tape passed through the crystal tube into the empty ball where it was attached to an empty spool.

Behind the switchboard at the back of the chest was a small lead casket.

Neis slid back a panel in the lead casket, revealing a tiny, black, crystal window through which we could see a fierce, glowing spark of light.

Radium the Brain of the Ship

"THAT is radium, the brain of the ship," he explained.

"Brain?" I repeated in bewilderment.

"To be sure; the control center of the craft," he said patiently. "That tape-filled spool is the record of the journey this ship made from Ev to earth. The flight back to Ev from earth was accomplished by reversing the motion of the spools and letting the brain handle the ship. And now the steel tape is again reversed for the flight to earth and is winding up on the empty spool, but too slowly to be detected by the naked eye. When the tape is all on that empty spool four hundred years from now, this ship will be in your solar system, or so close to it that no one could miss it."

"How does it work?" asked Winifred.

"Those electro-magnets in the sides of the crystal tube between the two balls set up magnetic fields through which the tape passes. Upon this tape is printed a magnetic record of the original journey. This imprint sets up microscopic variations in the magnetic fields of the electro-magnets, which in turn transmit the variations in the form of impulses to the various electrical controls of the ship through the switchboard. The lump of radium in the lead casket is the special generator of current for this tiny switchboard, the electro-magnets, and the motor that rotates the spools. The current results from the continuous bombardment of radium particles against the raraghon screen with which the casket is lined."

"Current for the whole ship, too?" I exclaimed in amazement.

"No, just for the brain. Current for the ship is generated by large lumps of radium in big lead containers which operate unended for thousands of years."

"You mean, then, that if no one disturbs this ship, it will fly straight back to earth?" I asked excitedly.

"Not quite, but almost. Your solar system does not move exactly in accord with the drift of the three suns of Ev, but so close to it that in the course of a couple of thousand years the variation is less than a billion miles. Or, as space is measured, less than a hairbreadth from the exact center of the bull's eye."

A Trivial Variation of a Billion Miles

FULL understanding of the daring plan burst upon me. I was filled with exultant hope. The dangers? They would have seemed overwhelming in other circumstances, but in our desperate plight, they were trivial. But not entirely forgotten.

"How about the suspended animation?" I queried anxiously.

"It will be taken care of by the radium brain far better than human hands, or even Thak intelligence, could manage it. The brain keeps constant the eos vibration which prevents the tiny spark of life from becoming entirely extinct. And at the proper time it will give the order to thaw out your bodies and awaken you to life

again. On the original journey my own awakening was recorded on the tape, and this same order will suffice for both of you, since it applies to everything in the compartment. Meteors? They are taken care of by a special warning device which also automatically cuts out the brain control, takes charge of the ship and steers it to safety, then returns it to the course again and gives control back again to the brain. Come, I must teach you how to handle the ship before I become too weak."

A day or so later, earth time, I had mastered the rudiments of navigation, manipulation and landing. Then Winifred and I went down to the crystal compartment with the pallets. Neis shook hands with us dully. His eyes were glazing and he swayed on his feet. Only by terrific effort of will could he keep moving. He closed the panel on us, but this time we held the secret of opening it from the inside. Filled with uneasy fears that we would not admit to each other, we lay down on our separate pallets . . .

* * * *

IT seemed to be but the next morning when we awoke, as indeed it was for us. The ordeal was excruciating, agonizing. I arose stiffly to find Winifred already up and fairly drinking in the sight of the brilliant sun, our own sun, that shone far ahead of us in

space like a flaming arc light still small in the distance. She smiled at me tremulously. Asleep four hundred years? Impossible.

The End of a True Friend

AND so it seemed when we opened the compartment panel and stepped out into the passage. But in the control room we found a moldering skeleton against the rear wall. There were a few metal buttons and shreds of clothing. That was all that remained of Neis. He had evidently died while gazing back at the whirling, thinning cloud of his world, which like himself was passing out of existence.

I stared back at the vast curtain of infinite space, trying vainly to place the location of the three suns of Ev when Winifred gave an excited cry.

"Look, look! A space ship!"

Sure enough. The glasses revealed the name on the bow of the long cigar-shaped hull: "*ANDROMEDA*, Port of New York, U. S. A., Earth."

Truly the centuries had slid past, for in 1933 there were no space ships from earth. Contentedly I set a course to follow the *Andromeda*, and then with Winifred, went below to find the store of frozen food we had gathered under the direction of Neis before his death four centuries before.

THE END

What Do You Know?

READERS OF AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a text-book. Moreover, most of the stories are written in a popular vein, making it possible for anyone to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge of science.

1. What two examples of aluminum oxide widely separated in appearance and value can be cited? (See page 101.)
2. What is the accepted description of the color of a perfect ruby? (See page 101.)
3. What relation have aluminum salts to the "purple of Tyre"? (See page 101.)
4. Can anything be found in the old, rejected theory of chemical compounds suggesting the "negative gravity" of friction? (See page 101.)
5. What was the value of aluminum in the middle of the last century? (See page 102.)
6. Can you describe the thermit process? (See pages 102-103.)
7. What is a caynco? (See page 106.)
8. What does the word balsa mean? (See page 108.)
9. What are the properties of balsa, and what is it used for? (See page 108.)
10. What are the names of the Satellites of the planet Mars? (See page 128.)
11. How many Satellites has the planet Mars? (See page 128.)
12. Give some examples of alchemist's terminology. (See page 144.)
13. What substance will pass ultra-violet light? (See page 144.)
14. What color will copper impart to a blue flame, as of a gas stove? (See page 150.)
15. Would aqua Regia be a good solvent for an alloy containing lead? (See page 151.)
16. What detail of the story recalls the invention of the scientist Poulsen "The Edison of Sweden?" (See page 162.)
17. What is the error in logic in the sentence beginning "No," whispered Bill, "nor I won't . . . etc."? (See page 164.)
18. What is the law of the pendulum? (See page 181.)
19. Is the author's calculation of the length of a pendulum beating twice as fast as one of five-foot length correct? (See page 181.)

THE BRONZE DOOR

By Jerry Benedict

"*THE Bronze Door*" opens into a plain little office in which wonderful results are obtained by one scientific worker after another, but each one after a time, and after doing wonderful work, becomes insane. The mystery is only solved at the end of the narration. The attention of the reader is held to the end, or it would be more proper to say is excited more and more up to the very last lines of the story. We think that Jerry Benedict has made a most effective bow in his introduction to our readers.

Illustrated by MOREY

THE drafting room in which young Jack Wells was assigned a table was a special sort of place. Beyond it stretched the great experimental laboratories of Combined Electric; next it were the inner fastnesses of the chambers where the great P. L. himself sat when he retired from the main offices in the palatial administration building to study and weigh the results of the subtle and startling experiments that were forever going on in the outer laboratories. And it was the corps of men in the special drafting room—chosen, like Jack Wells, from the cream of the honor men of the finest engineering schools—who had made Combined Electric and P. L. what they were.

But, of course, the staff wouldn't have been there except for P. L. Whenever Jack caught sight of Philip Landon, with his broad, stocky frame and his shock of gray hair over a lined, impassive face, he felt the veneration of the raw beginner for the figure who had commanded the birth and development of epoch-making ideas that had made him the overlord of electricity in the United States—of light and power and cables and radio. Jack looked upon him with something approaching worship, and with hardly less upon the gaunt figure of Reycraft, the engineer who occupied a small private office next to P. L.'s and came and went from the drafting room by a door that was finished in antique bronze.

Behind the Bronze Door

JACK, thinking of the striking and ingenious ideas that had been conceived by Reycraft in the last few months behind that bronze door, would study the man's lean dark face, with the lost, fathomless look in the deep, black eyes, and envy him his chance. Why, Reycraft was still a young man, and see how far he had gone!

"I wonder if I'll ever be good enough to get behind that door," Jack remarked to one or two of his fellow-

workers. "Boy, I'd sooner spend one day there than run a hundred yards through a broken field." They looked at him covertly and changed the subject. He thought it must be imagination that made him seem to see a flash of fear peep from their eyes.

But Bill Cunningham, the oldest man in the room, had started to say something to him. "I like you, lad," Bill muttered, behind the freckled hand that tugged at his tawny mustache, "and I'd rather not—Look here, you've been turning out some corking fine ideas lately. Enough to get you noticed. And Reycraft is getting pretty peaked. Any day now—" He had dropped his voice to a murmur, and his pale blue eyes blinked warily around from behind his spectacles. "Did you notice me doing anything brilliant just now?" he asked.

"If you really want the truth, Bill," Jack grinned, "you haven't had the intelligence of a dopy dodo for weeks."

"No," whispered Bill, "nor I won't till somebody else but me is behind that bronze door."

Not a word more would he say. Jack sat for a moment staring at the door and dreaming, before he bent over his table again. What an honor to be able to stride through the room like Reycraft, straight on to proximity with P. L. and the fabrication of world-altering schemes!

The Attack with the Straightedge

THE bronze door swayed open with sudden violence, and Reycraft sprang out. He stood glaring about him, his dark, drawn features distorted. Then he screamed—a piercing, maniacal screech. Higgins, a plump blond man, an inoffensive sort, sat goggling at him. Reycraft whirled up both arms. He held a steel straightedge. The heavy metal swished through the air like an executioner's two-handed sword. It struck Higgins beside the head before the man could flinch. He crumpled from his stool. Reycraft screeched again, and made for another victim.



His fingers closed on a button of some sort. There was a rending crash—a blinding, immense burst of blue light, that arced from side to side of the room in a cataclysmic flash.

Jack Wells took three smooth steps and left his feet. His tough shoulder swept Reycraft's knees from beneath him and brought him down in a shrieking, thrashing pile of bony limbs. Reycraft hacked him twice about the head with the straightedge before he was disarmed and held by the others. As Jack scrambled up he turned resentfully to a figure that he had glimpsed twice during the scuffle, standing motionless by.

"Why didn't you go into action, instead of standing there like a mope?" he demanded, wiping blood out of one eye.

A familiar deep voice said, "Your name is—let's see—Wells."

Jack stared into opaque gray eyes.

"Yes—yes, sir."

P. L. nodded and turned away. "Have Higgins taken to the first-aid room," he told McLaughlin, the wizened chief assistant, "and carry Reycraft into my anteroom." His broad back receded with calm deliberateness.

Jack recounted the incident to Peggy Gerbing at lunch. It was Saturday, and that summer they had come to spend the half-day together always, following lunch with a rambling drive somewhere in Jack's ancient but well-nurtured Goliath roadster. Peggy worked in the administration building as secretary to P. L.'s secretary, and naturally the pair talked a good deal of shop.

Talking Shop Together

"NOW what did the old panjandrum mean?" asked Jack. "Your name is Wells," says he, and not a thanks-my-man or a blast-your-nerve to tell me whether he was miffed or pleased. Maybe he'll break me for being flip with him, or maybe—say, Peg, do you suppose he took notice of the flying tackle the boy hero made and is going to go Horatio Alger? D'you suppose he'll give me Reycraft's job?"

Peggy didn't smile. To Jack's astonishment the same look came into her violet eyes that he had seen others wear at the mention of the bronze door.

"I've been with Combined Electric three years," she said slowly. "In that time I've seen five men hold Reycraft's job. They were all young men, without much experience, but with signs of brilliant promise. Reycraft's the first one who has gone violently insane; but do you know where the others are, Jack?"

"Where?"

"One killed himself; one's in a sanatorium—nervous breakdown, they call it; two are transferred to distant branches of Combined, where they sit at desks all day doing clerk's work for a clerk's wages."

"Men break under hard work every day," Jack said, amused. "Only the tough ones last under high pressure. This is just a series of coincidences."

"P. L. has heard good reports of you," Peggy said slowly. "He was pleased with the work you did with the six-element tube, and those studies in artificial lightning."

"Don't nourish my pipe dreams," Jack laughed. "I haven't a chance. Let's go places." And when the sun and the car-made breeze turned Peggy's golden wind-blown bob into a shimmering halo, he was almost content to barish foolish ambitions for the moment.

Tension Among the Engineers in the Office

HERE was tension in the office Monday morning. When anyone came or went from P. L.'s sanctum, uneasy heads turned and quick eyes followed.

When wizened McLaughlin emerged, not a ruling pen moved against a T-square. He stopped by Jack's table.

"Wells, see P. L."

A sigh went up from the room, and Jack, his heart pounding, found himself wondering whether the collective exhalation was one of disappointment or relief.

P. L., his broad hands flat on the glass-topped desk, studied Jack with an inscrutable gray gaze.

"What do you know about cathode ray effects on duralumin?"

Jack's heart sank. "Not very much, sir."

"Good. Want fresh ideas. You had them in those lightning tests. May have them in this. We've been having structural defects show up in the duralumin we're using in the Reichhardt levitators. Find how to detect and avoid them. That's your first problem. Show him into his office, McLaughlin."

Later Jack, alone in the small, plainly furnished office behind the bronze door, looked about it proudly—at the few cases of books and instruments, at the bare walls, the small rug, the single desk. Then he tilted back his chair, set his heels on the desk, and thought about cathode rays and duralumin. He had already checked up with the factory men who were working on the levitators, but he'd have to learn a good deal more before he could even begin to plan. Perhaps he ought to ask some questions of the fellows outside who might have done some research along those lines—yes, and have them give him the grand hurrah! The expert running for help. He ran his brown hands through his wiry black hair and felt the cold grip of doubt. Suppose he failed on this, his first assignment!

The Inspiration of a First Assignment

INSENSIBLY, as he sat staring at the buff plaster opposite him, a warmth, as of excitement, came creeping through him. His mind, as bright and active as a questing squirrel, went darting here and there. Scraps of lore, heard or read and long since forgotten, came bubbling up into his memory. His feet came down with a thump. What was it that Professor Gordon at Tech had said about an obscure effect that the Frenchman, Fevrier, had discovered once and never found any use for? Jack's brain was fizzing with fervid activity. Here was a lead! Get after it hotfoot! His cheeks burning with excitement, he snatched the

telephone and called the library for a complete bibliography of Fewrier's work.

"We'll not go to the dance if you'd rather not," Peggy said. "But aren't you feeling tired too regularly these days, Jack?"

"Tired? Wrung out. I never want to drive, even, or read a newspaper, or do anything."

"Except when you're at the office."

Jack, with an effort, straightened up from the divan he had been lolling on in the sitting room of Peggy's home, and with heavy eyes answered her level gaze under the soft lamplight.

"When I'm in the office I'm burning up with pep," he said.

"Purely enthusiasm for your work?" she asked, pointedly.

"At first I thought so," he answered slowly. "During the first few months, when I began to turn out good stuff and get P. L.'s commendation and big boosts in salary, I was sure it was the joy of work and ambition to succeed that set me on fire with ideas that came swarming. But I've noticed that I never feel that way until—" His voice drooped wearily.

"Until?"

"Until I've passed the bronze door and sit down at my desk. As soon as I leave to go anywhere else I'm done for. I can't think. I go dead. I never thought I could feel so dead inside. . . . Peg, I'm beginning to think there was something behind your warning."

Peggy's face was steady, though her hands were tightly clasped. "Think of Reycraft. Couldn't you go away, Jack?"

"Quit? Where would my career be? Get in P. L.'s black book and you're through as an electrical engineer the world over. You know that."

She nodded gravely. "That was why none of them could quit."

Remembering Reycraft's Insane Attack

FOR hours, in the still lamplight, they spoke in whispers, their heads close together, as Jack desperately drove his wearied wits to cope with this grotesque menace. He remembered Reycraft, his crazy mouth agape in a senseless scream, and a cold terror began to rise like an icy tide as he felt his own resilient mind, once tireless, begin to falter and flag into a stolid numbness.

The next morning he marched through the drafting room, pushed through the bronze door and seated himself at the desk. In a few moments he was his old self again; again a few moments and he was more than his old self—he was the new self, whose mind had never worked so brilliantly or so forcefully. He was burningly eager to attack the current problem; suggestions for solving it bubbled up through the ferment of crowding thoughts. But he paused resolutely and fished out a clinical thermometer from his pocket. He left it under his tongue for three minutes. When he glanced at the shining thread of mercury he nodded

at its confirmation of his very worst suspicions.

He left the office by an inner door and at the end of a short passage came into P. L.'s anteroom. The great man's secretary ushered him into the inner office at once.

P. L. glanced up. "Morning, Wells. Results on that synchronizer?"

Jack gathered his suddenly jaded faculties. "I wanted to see you about something else, Mr. Landon. It's about my office."

"Submit a list of any changes you'd like made. We can't make it too good to house a man who gets results." A brief suggestion of a smile lightened the man's powerful features.

"It is too good," said Jack steadily. "That's my complaint."

Landon studied him calmly for a moment. The air seemed suddenly tense. "You've chosen a poor time for any extended discussion, Wells. And that remark of yours needs discussion."

"Yes, it does," Jack assured him quietly.

"I've no time for it at this moment. As it happens, the workmen will be coming in a few minutes to make some changes in my own office here. I shall have no time for you to-morrow, either, and I'm leaving at midnight to-morrow night for the west coast. Come here tomorrow evening at nine, Wells, for a confidential chat with me." He nodded in brisk dismissal.

Phillip Landon's Secret

WHEN the young engineer told Peggy of the interview, she shook her head doubtfully. "Do you think it was wise to march right in and let him suspect you had guessed his secret?"

"It's the only way. If I suddenly ran away, he'd know that I'd surmised the truth, and he'd see that I was kept in harmless obscurity permanently. He has the power to do it. But if you meet the strong with strength, you may compel their respect and win a fair break. I think, if I face him openly, I can use my knowledge of what he's been doing to force him to end this infernal business."

He wiped a hand across his face and settled back, unable for all his dogged effort to resist the wave of enervation that followed his earnestness.

Peggy spoke with quiet determination. "I'm going with you."

"You're not."

"Try to stop me. With the handicap you're under from what Landon's done to you already, you won't have a fair chance in a battle of wits with him. You're going to have an extra pair of ears and a spare tongue with you when you face him. Indeed you are!"

Indeed he had. Peggy fairly bristled with resentful anger against the man of might who had hitherto been to her a figure of beneficent power, and who had suddenly become a fantastic menace to the man she loved.

Side by side they entered the gate of the laboratory grounds the next night, and walked from the ghostly

moonlight into the frowning shadow of the building. Jack could feel her hand shaking on his arm as he unlocked the door, but when at last they entered the lighted office and faced Landon across his desk, she wore a contained little smile.

"I Was to See You Alone"

"I WAS to see you alone, Wells," Landon said curtly. His bleak, impassive face was set in a forbidding mold.

"Miss Gerbing is my fiancée. She knows all about what we're to discuss. I feel that it concerns her closely."

Landon regarded the pair inscrutably for a space. "Take the chair, Miss Gerbing," he said then. "I'll get another from the anteroom."

Peggy seated herself in the single chair that faced Landon's desk. The great P. L. had gone himself to fetch another, bestirring his heavy frame with surprising alertness. In his brief absence, Peggy glanced sharply around the office.

"What changes?" she whispered.

Jack frowned. "None that I can see. The paneling is a little altered, maybe."

Landon placed a chair for him beside Peggy's and resumed his seat behind the desk.

"Be brief, Wells. What have you learned?"

Jack settled his hands firmly on his knees and gathered his forces.

Jack Tells What He Had Learned

"THE five men who held my job before this are now mental wrecks."

"The world is full of men who weakened."

"My own mind, when I'm in my office, is preternaturally bright and active. I perform mental feats that were once totally impossible for me, and make discoveries in a few hours that would normally elude me for years."

"Psychologists say that we learn to do our best thinking under a certain complex of favorable conditions," said Landon.

"My mind, when I'm elsewhere, shows signs of becoming dull, worn out, run dry."

"A natural reaction that all brain-workers feel in off moments," was the rejoinder.

A Diagnostic Report—The High Frequency Field

"A CLINICAL thermometer shows that whenever I'm in that office I have a bodily temperature that runs as high as that of a sufferer from an acute and violent fever. It subsides when I leave the office and returns when I enter it again. I believe that this strange fever extends to the brain and accounts for its undue and startling activity."

Landon answered nothing this time, but sat silent, waiting.

"Other tests that I have made confirmed the suspicion that the thermometer aroused. Mr. Landon, there exists in that room a high-frequency field that stirs any living thing that enters it to a morbidly feverish state that represents a furiously increased condition of cerebral activity. With cold inhumanity you have taken man after man of fine caliber, plunged them into that tremendously stimulating bath of electric waves, and spurred their brains to a febrile and frantic labor. The products of their minds you've used for yourself, and then cast the broken tools aside. You literally burned up their minds for your selfish purposes, leaving them stupefied or crazed, poor, useless, addle-witted ashes of men. You've meant me for the same fate. Already I've felt the effects; but I think I've caught it in time, and can win back to full mental vigor and wholesomeness with a little rest."

He stopped, drawing a deep breath to gather himself for what might follow. Landon's opaque gray eyes were fixed abstractedly on the ceiling. Peggy nudged Jack's knee swiftly with her own. When he glanced at her, she gave her chair a little tug. He saw that it did not move. It must be fixed to the floor. That was odd.

"I'm afraid your mind is a little unhinged with your work already, Wells," said Landon, gently. "Overwork, perhaps. A little vacation might rid you of this hallucination."

The Pervading Hum of an Alternating Current Generator

JACK smiled. "Mr. Landon, at this moment I hear a sound that would be veiled by the daytime noises of another hour than this. It's a faint, steady whining hum, like the note of a powerful generator. I believe it to be the generator that creates the field that fills that room of mine. Are you willing for me to turn-to right now and locate that hum?"

Landon replied imperturbably, "Supposing that your contention is correct, what do you wish?"

"I want you to dismantle the apparatus, to promise never to use such a devilish device again, and to reward handsomely the men you have ruined and their families."

"If not?"

"If not, I shall make public what I have learned. Regardless of whether or not I am believed, even though you may conceal the evidence of what has already happened, and may smash me flatter than a trip-hammer for spoiling your game, nevertheless you'll never dare to try it on anyone else. I'll have saved God knows how many other men from Reycraft's fate. There's only one thing sure. You've got to end this."

Landon nodded slowly, passing his blunt finger tips casually back and forth along the edge of the desk. "Exactly," he said. "That is just what I am going to do. I am going to end this."

Jack felt a great wave of relief pass through him. He was almost exhausted with the strain of facing

down this taciturn figure of unbounded power. The battle was ending in a victory! His plan had been sound, and Landon, faced with a strong defiance, was yielding.

Peggy's knee knocked his smartly again. She flicked her eyes toward the paneling. On each side of the room, in direct line with them, a section of the wood had slid noiselessly aside. In the dark apertures dimly shone great metal globes of electrodes. He recognized them in a flash. Hadn't he devised them months before for the series of experiments that had first called him to P. L.'s attention? And the hum! It was louder—fool not to have guessed at once!

In the Path of the Electric Discharge—The Fight

THE last part of that thought went racing through his brain while his body was in the air. Almost instantaneously, at the sight of those open panels, his muscles had hurled him bodily from the chair in a headlong leap across the desk at Landon, whose fingers were already reaching under the gleaming surface for some hidden appliance. But before he had leaped, with one sweeping arm he had thrust Peggy from her chair and out of the line between those sinister gleams of metal.

One forearm took Landon around the throat, and with a sinewy twist of his whole body Jack bore the man backward out of the swivel chair and away from the desk. Landon was heavy and powerfully muscled. As they thrashed about on the floor, Jack received blow after blow that addled his head and sent waves of sickening pain through his short ribs. But his hard fists were driving in jolting and telling blows on the bigger man, and at last Landon, tearing loose, worked his way to his feet. Jack was up and after him in a second. A fierce joy filled him. His speed of foot and boxing skill made victory an assured thing now.

Landon rushed him. Jack slipped aside to counter. His foot caught in a leg of the sprawled chair. Landon's fist crashed home on his jaw. He was hurled

against the wall, his eyes dimming and his knees sagging. Landon closed in furiously to finish the work. Instinctively, half-blindly, Jack lashed out with a straight right that flashed between the ponderously swinging fists. Landon reeled backward across the room, and Jack, staggering aside, clutched at the desk to steady himself. His fingers closed on a button of some sort. There was a rending crash—a blinding, immense burst of blue light, that arced from side to side of the room in a cataclysmic flash.

Blinded, choked with ozone, Jack felt hands on his neck. Before he could strike out in a savage attack, Peggy's voice sobbed in his ear, "Jack, Jack! Are you hurt? Oh, take me away! It's too dreadful."

And Jack himself, gazing at what lay on the floor in the path of that murderous discharge, had no desire to linger. They stepped swiftly into the dark passage, eager to be quit of that charred form. But Peggy, calm again after her outburst, whipped back into the room for one brief moment before they stole away together through the darkness.

"No one will ever know we've been here," Jack whispered. "He intended to leave our bodies where it would seem as if we were victims of one of my experiments that went wrong. Now that's what they'll think about him." Then he stopped dead. "The fingerprint!" he groaned. "There's only one that could implicate us. The one on the button!" He turned to retrace his steps, but Peggy held him back.

Peggy Has Destroyed the Incriminating Fingerprint

"DON'T," she said. "I told you you needed another head to help you. What do you suppose I went back for? I wiped that button very carefully with my handkerchief. And I was so darn scared to touch it—"

In the darkness of the corridor, touched yet with the ominous scent of the death-flash and within arm's reach of the sinister door of bronze, Jack paused to gather her for a long moment into his arms.

THE END



The Girl and the Glacier

By George P. Pearce

THIS is an idyllic story, transferring us from the present time to the days of Louis Fourteenth and then bringing us back again to our era. The adventures, in and on a glacier, lead eventually to a happy ending.

Illustrated by MOREY

"**W**ELL, I'll be shanghaied, Jake, if it isn't starting to snow!" said the astonished Ted Underwood to his horse. The young man had good cause to be astonished too, for it was still August. Had he had a guide with him, however, he would have learned that snowstorms were not uncommon around the Canadian Rockies as early as this.

The horse, Ted noticed, took the unexpected storm very complacently and continued plodding due south with the utmost contempt for the whirling padding snow. Now Jake had always lived around Lake Louise and probably knew as much about the place and weather there, as any human being, so Ted felt complete confidence in his horse's ability to get home even after the trail became obliterated. The snowstorm increased in fury and quickly whipped up into a blizzard so that it was impossible to see ten paces ahead and Ted abandoned the reins and let Jake choose his own way. Their location, as near as Ted could estimate, was fifty miles north of Kicking Horse Pass and along the lower slope of the Rockies. He figured there was no chance of reaching Lake Louise for a couple of days but as he still had a three days supply of pemican left and plenty of ammunition for his rifle, he had nothing to worry about. Furthermore he would just as soon sleep in a shelter of rocks and pine branches as in the hotel bed, for he enjoyed his vacation best out of doors.

Suddenly his thoughts were broken by a terrific rending crash followed by a resounding plunge. The avalanche, or whatever it was, startled Jake and he shied towards the right and started scrambling up the mountain side. Ted, with a tight grip on the reins, lay well forward for there were plenty of trees around and to get brushed off in this wild rugged wilderness might bring his trip to a disastrous ending. Up the mountain side raced Jake, twisting in and out among the pine trees at a pace that would have to slacken soon, for the slope was getting steeper and steeper. Then an extraordinary thing happened: The ground under Jake gave way and the horse disappeared. Ted who had leapt from the saddle clawed frantically on the ice and snow at the edge of the crevasse, but was unable to grab anything and finally tumbled into the black hole after his horse. He fell a considerable distance, hit something springy,

bounced into snow and ice, struck his head and lay stunned.

Some time afterwards Ted opened his eyes and for a while could not realize where he was. All he could see was a large jagged hole straight above him through which snow was falling, he also had a terrific headache and felt frozen. Soon the memory of the fall returned and staggering to his feet he tottered over to where Jake lay and found that that unfortunate animal had broken its neck and that its final act had been to save its master's life for he saw where he had bounced off Jake's tough ribs into the mass of snow, ice and rocks that had once formed the roof of the cavern he was now in. By this time his eyes had become used to the weak light, and he saw that the cavern was about thirty feet wide and possibly twenty feet high. The length, however, was indeterminable, for it disappeared into abysmal blackness in both directions. He did not waste any time in speculating as to what had formed the cavern or whether the recent avalanche had anything to do with the roof being so thin, for he knew the most important thing to do was to get out as quickly as possible. He would probably have to walk all the way back to Lake Louise, about seventy miles he estimated, for the possibility of running into an exploring party was very remote. Furthermore he had left no word at the hotel as to where he had gone or when he was to be expected back, so there was absolutely no chance of a rescue party hunting for him. The pittance of light did not permit him to search very far in either direction and by the end of half an hour he had confirmed his suspicions that for several hundred feet in both directions the walls and floor were solid rock without even a crack. He also discovered the remarkable fact that the walls and floor were also polished and scored and perfectly clean which indicated glacial action—but who ever heard of a glacier flowing inside a cavern? The clean floor also prevented any possibility of collecting rocks and boulders to build a pyramid up which he could climb to reach the surface again. Then he thought of Jake's fifty foot tether line, and taking this from the saddle he picked up a small chunky rock from the clutter that had fallen from the roof and tied it to one end. Next he threw this through the jagged window, or skylight, hoping that the attached rope would become entangled with something outside and then he could climb up and escape. This idea was



For an instant, the sudden flare blinded him—and as his eyes finally became adjusted to the sparkling glitter, he beheld a most astonishing vision . . . a few feet in front of him.

a complete failure for although he threw it up many times and to all points of the compass, there was evidently nothing for it to tangle on and darkness finally made him abandon the effort. Since nothing more could be done until morning, Ted unpacked his blanket, rolled up in it and went to sleep.

THE cavern was quite light when he awoke for an oblique sunbeam entered through the skylight and made an irregular pattern on the floor about a hundred feet away. He was cold and hungry, so he postponed any further exploring until he had had a scanty breakfast of pemican with ice for a drink. After this he started down the slight incline towards the lower end of the cavern for he reasoned that would be the most likely place to find an outlet. The shaft of light allowed him to walk with comparative ease for a distance of about two blocks but after that the blackness became almost absolute. He was now compelled to creep cautiously forward and guide himself by the wall and it seemed as though a black velvet curtain was hanging just at the tip of his nose as he felt his way downward for almost an hour. Then he was stopped by a hard smooth slick wall which he found extended across the full width of the cavern. After carefully pawing around he came to the conclusion that he was up against a barrier of ice. Before returning he decided to strike one of the precious matches he carried in a waterproof case. For an instant the sudden flare blinded him and then he saw that the entire end of the cavern was blocked by a single mass of bottle green ice. Then, as his eyes finally became adjusted to the sparkle and glitter, he beheld a most astounding vision: an extremely pretty girl stood a few feet in front of him. A mass of blue black hair hung in profusion around her shoulders and her eyes were closed as though blinded by the unexpected light. A nicely fitting jacket of thick white fur with skirt to match protected her from the cold—then the match went out.

"Oh, I'm sorry, I, er, didn't mean to startle you," said Ted instinctively but the girl did not reply.

Hastily getting another match Ted warned: "Look out now, I'm going to strike another match."

This time the blaze did not dazzle and he immediately noticed that the girl had not moved. She wore high leather boots and seemed to be literally standing in space for she was more than a foot off the ground. Then the fact slowly dawned upon him that this fascinating beauty was part and parcel of that tremendous block of glacial ice in which she was frozen solid.

Match after match was struck and burnt to the end and not until he came to the last one could the entranced young man tear himself away from the lovely image. Even then he could hardly realize that several feet of the clearest bluish green ice, he had ever seen, separated them and that she was a frozen figure instead of a living girl.

How long it took or just how he got back Ted was never able to recollect for he was lost in a bewildering maze of thoughts as to what could have happened to entomb this wonderful girl in the midst of such an inhospitable country.

Finally Ted shook off his day dreams, ate a little more of the pemican and started to explore the opposite end of the cavern, and after half an hour of careful groping up the slope he walked into another blockade. This time he could feel a mass of small stones

and silt and also some dead wood sticks and pine cones. This gave him the hope that possibly there were some large branches and heavy limbs somewhere around that he could use to build a scaffold up to the skylight and escape, so he decided to take a chance and use his last match. With this he lit several of the pine cones and by their spluttering flame he was able to collect a large pile of branches. These unfortunately proved to be of no value for building purposes for they were all brittle and snapped at the least strain, but anyway they were useful to keep the fire burning while he searched further. The end of the cavern was entirely choked with light gravel and silt and mixed in among this were the sticks and cones. This all indicated that somewhere in that direction there was an inlet but how far back it was he could not even guess.

AFTER several hours of searching he had to abandon hope of getting any material suitable for scaffolding, so he next thought of trying to signal to the outside world by a column of smoke and although this was a most forlorn hope, for there was probably no human being within twenty miles or more of the place, still any chance was better than no chance at all. He therefore built a series of fires down the cavern to the place under the skylight and carried a large supply of fagots there and soon had a fire burning right under the opening and a column of smoke drifting out.

This exertion had made him ravenously hungry and he ate a large portion of his pemican supply, and by the time the meal was finished the long twilight had faded into a starry night and all hope of rescue for that day had gone. Not feeling sleepy he sat by the fire and tried to solve the mystery of the girl in the glacier. Suddenly he decided to have another look at her and picking up a firebrand and an armful of fagots he hurried down the incline to the glacier.

The girl, he now discovered, was even more attractive than the flickering matches had revealed, and he also saw that she appeared to be simply asleep, so tranquil was her expression. She was in a perfect state of preservation and it seemed as though the clear ice was simply a greenish hued plate glass window which she was vainly trying to push aside in order to step down to the cavern floor.

Suddenly an idea began mulling in his brain. He remembered he had several times seen fishes in shallow water frozen solid for the entire winter and in spring they had thawed out apparently none the worse for their suspended animation. Therefore, Ted wondered, why could it not be possible by a slow and uniform thawing to return the girl to life. Immediately he decided to make the attempt and racing back he obtained enough faggots to provide light for several hours and with these together with his camping axe he hurried to the glacier face and commenced the task of removing the girl.

For many hours he carefully chopped and sliced at the ice mass until he had cut a gap completely around the girl leaving her embedded in an ice pedestal. He had purposely left a thick layer of ice along her back and now he carefully split the base from the rock floor and gently laid the figure down on this ice runner. This glossy surface combined with the smooth floor of the cavern enabled him to push the block of ice back to the camp fire where he rested just long enough for a meal of pemican and ice.

He now entered on the second stage of the experiment. With his hunting knife he carefully scraped and split away all surplus ice until he reached the tips of the fur costume. This was followed by the exceedingly difficult part of uniformly thawing out the maid so no portion would remain frozen to interfere with the vital pick-up—if revivification proved possible. By the time the stars began to fade and the approaching dawn turned the sky a pinkish grey, all the ice had been melted, and in a few more hours the girl, surrounded by closely packed pieces of hot rock, was warmed to blood temperature.

TED next commenced artificial respiration and soon had a rhythmic flow of air entering and leaving the girl's lungs but as the day wore on there was no sign of life. Hour after hour Ted continued the motion and, as twilight approached and then dwindled into the blackness of the longest night he ever remembered, he stuck to his task. With the approach of another day the pain of outraged muscles felt like white hot needles being thrust into his sides and back with every breath and by nightfall the entire cavern seemed to be rolling and swaying like a ship's hold in a storm, and as another dawn tinged the sky with a streak of pink he suddenly collapsed and fell on his side unconscious.

A delightful aroma of cooking revived Ted from his coma and he noted he was warm and comfortable. He opened his eyes but doubted he was really awake, for he beheld the girl in her snow white costume kneeling in front of a blazing camp-fire calmly barbecueing a generous steak on a wooden spit. In astonishment he sat up and the motion caused the girl to turn.

"Feel better?" she asked in a strange, but very clear, French.

Ted knew enough Canadian French to understand her and, still considerably bewildered, he jumped up, grabbed his blanket and attempted to wrap it around her, but somehow she slipped to the other side of the fire and stood looking at him with suspicion.

"Madmoiselle," he said anxiously and in his best French. "Please let me wrap you up immediately. You're taking chances with pneumonia."

"Pneumonia? Where is he? I see no one," the girl answered looking around. Then two exquisite dimples appeared as she smiled; "Come," she said soothingly, "You must be hungry. Let us eat. I still feel starved," and picking up his hunting knife she sliced the steak in two and offered him his choice.

The meat was cooked to a turn and altogether it was a most enjoyable meal but Ted was still considerably worried about the girl. She certainly looked lively enough and had fine, pink cheeks but Ted, somehow, thought she ought to be thoroughly wrapped up in a warm spot, and not even permitted to speak for several days. Everything was so unexpected and topsy-turvy.

"Don't you feel cold? Haven't you any pain or headache?" he stammered not wishing to ask too many questions, for fear of exciting the girl, for there were hundreds of questions clamoring to be answered.

"No I don't feel cold and I haven't any pain—you can see that! But where did you come from and how did you manage to pull me out of the snow slide? Is this your cave? What's your name?" said the girl piling on the questions with French-like rapidity.

"I'm Ted Underwood and I live in Boston," he explained quite bewildered for it was evident she knew

absolutely nothing about being in the glacier and he dared not tell her too much at first. "How did you get caught in the snow slide?" he asked avoiding any further answers.

"Uncle and I and Sequa are looking for the big river and yesterday I was hunting rock rabbits. I had just jumped over a small crevasse when the mass of snow I landed on started to slide, and before I had time to get on my feet we scooted down the mountain and everything tumbled into a big hole. I was jammed in so tightly I could not move and could hardly call for help. Then I kept getting colder and colder and sleepy and sleepier and then everything went out. It has certainly been a terrible experience," she stopped with a shudder and pushed several branches under the fire bed.

"And what then?" asked Ted breathlessly.

"I SUDDENLY awoke with a dreadful pain in the back of my hand. I opened my eyes and to my surprise found I was lying between you and a bonfire and that a pine knot had jumped out and was burning close to my hand. "Look—" she was extending her small hand so Ted could see the nasty burn. "I jumped up and tried to wake you," she continued, "but you were too lazy and would not wake up, so I threw the blanket over you and feeling tremendously hungry cooked some meat. Later I got hungry again and was cooking more meat when, manlike, you woke up and wanted feeding."

"Gosh, I'm sorry I fell asleep—I didn't mean to."

"Oh, no. Of course not," said the girl quite sarcastically. "For all you cared I could have burned up." Then she asked pointedly: "Where is my uncle and Sequa?"

"I don't know; really I don't," insisted Ted, noting a doubt in her eyes.

"Well Mr. Teddy Piece-of-Wood, or whatever your name is, I must find them at once, for they must be greatly worried and looking for me everywhere," said the girl very positively as she stood up and started fastening her fur coat around the neck.

"No don't, Madmoiselle, you can't go now; it's getting dark. Wait until morning. You'd get lost—Oh, you simply must rest a little. You've been almost frozen to death and it would be suicide to go out right away," sputtered Ted not knowing just what to say and not daring to tell her she must have been embedded in solid ice for a long time; perhaps for years. The shock, he was afraid, might cause a relapse if it did not kill her.

The girl hesitated, glanced through the skylight and saw that the stars were already visible and evidently considered Ted's advice had merit, for she undid her jacket again.

"Say, what's your name?" asked Ted to get her talking again, for he liked the pretty twist she gave the French words.

"My name is Marguerite—Marguerite de Grosellier. Perhaps you are right. It will be better to wait until morning."

She seemed on the point of asking the way out of the cavern and as Ted did not want to frighten her by admitting they were prisoners in the cavern and unless rescued in some unexpected manner would probably starve to death, he forestalled the question by picking up a firebrand and saying he was going for fuel.

"Then I'll go with you," said the girl very positively and Ted instinctively knew it would be useless to try to talk her out of it.

"Where did you get that steak you were cooking?" he asked as they were walking up the cavern. He had been worrying about this for some time.

"From the horse of course; that was all the food I could find. Where do you cache your provisions?" she said quite casually.

"Well you see that's the only food I have down here," explained Ted, concealing as best he could his astonishment, for he had never thought of a horse as food.

It took Ted over an hour's hard work to find a supply of branches while the girl held lighted sticks above her head for him to see by. It was evident she did not think much of the idea and finally she asked:

"Why don't you go outside for fuel. There you can pick up armsful quickly," she said impatiently.

"ALL right, let's go back. There's enough here to last until morning," he said roping the bundle together and swinging it upon his back.

Arriving at the camp he finally persuaded the girl to lie down and tucking the blanket around her told her to go to sleep. He then curled up near the fire and fell asleep himself.

It was bright daylight when he awoke and to his surprise he saw the girl had a large fire burning and was calmly barbecuing some more meat. He sat up and received the surprise of his life for there on the floor to one side was a huge pile of branches.

"Where did all those branches come from?" he asked.

"I told you there was plenty of fagots outside, Mr. Teddy," was her reply.

"But how the devil did they get in here?" asked Ted bewildered.

"Don't be silly," admonished the girl. "I threw them down through the opening as soon as it was light."

"But how the Sam Hill did you get up there? There isn't any ladder!"

The girl looked at him in astonishment as though he had asked her some particularly dumb question. "That was easy enough," she said. "I just tied the end of the rope on a piece of hot rock and whirled it around and then let it fly up through the hole. The hot stone melted the ice where it fell and as it was frosty it soon froze again and anchored the rope. Then I climbed up. Why were you afraid of going out last night? Are there Indians around?"

"Great guns, girl, no."

"I also ran to the top of the hill to see if there were any signs of Uncle or Sequa, but there was not even a foot print. Where do you think they can be?" she asked as she passed him a delicious portion of meat.

"I haven't the least idea, and listen, Marguerite, as soon as you are out of danger I want to talk to you about a lot of things," replied Ted throwing a few branches on the fire.

"Don't do that," warned the girl snatching them off again and pushing them carefully in underneath; a way that Ted had noticed her do before.

"Why not?"

The girl looked questioningly at him. "Because it will make a smoke and the Indians may see it," she carefully explained as though he was a little boy and had to be told the most simple things.

"From the way you talk anyone would think a lot

of wild Indians were around here. There are none here—none whatever."

"Indeed; Then perhaps you'll wake up when I tell you we found traces of Iroquois only two days ago," said the girl indignantly.

"Nonsense. There's no Iroquois in this part of Canada."

The girl was now surprised. "Canada?" she queried. "I've never heard of it. Is this part of New France called Canada?"

"New France?" It was Ted's turn to be surprised.

"My gosh, Marguerite, what year do you think this is?"

"Well, let me think," she said hesitatingly. "We left Quebec in the autumn of 1697 to search for Uncle Grosellier. In '98 we found a very large freshwater sea and Sequa was stricken with miasmatic fever, and we could not continue until 1699. The Algonquins had warned us that Iroquois had been seen and advised us to keep well north. Then we came to 'The Rapid River,' (The Saskatchewan) and Sequa and Uncle made a canoe in which we worked our way upstream for almost a year. Two days ago we reached the very beginning of it and Sequa seemed to think we had gone wrong somehow for we ought to have found the big river before this. Well, I'm getting off the date. It must be early in the autumn of 1700."

TEED simply stared into the fire. He did not know what else to do and was too astounded to even think up a reply. Either the girl had been locked up in the glacier for over two hundred and thirty-one years, or her mind was deranged and she was talking history. This idea prompted Ted to ask her a few questions.

"Who is president of France?" he enquired.

"What do you mean—president? Louis the Fourteenth is king."

"And who is king of England?"

"William the Third, of course. But for what reason are you asking all those questions?"

"Listen. I don't want you to think me inquisitive but will you tell me when and where you were born?"

"No, you're not inquisitive, but you're simply dying to know how old I am—that's all. Well if it will make you any more contented I was born in Paris on the 20th. May 1680."

"Say! Really I'm not just trying to pry into your personal affairs I have other reasons for asking," flared Ted rather indignantly.

"Indeed! And what are they? And why are you so queer?"

"Quer? Good Lord what makes you think I'm queer?" asked the surprised young man.

"Why everything you do is queer. You talk queer, your gun is queer for the flint and pan have been removed and the hole filled with a piece of iron. Then at one time you are afraid to go out because of Indians and then a little later you make a lot of smoke. You're either queer or plumb crazy," she decided.

"Well. Perhaps it may seem that way to you——"

"There's no maybe about it, Mr. Teddy, and I'm not going to sit here any longer answering your foolish questions. I'm going to look for my Uncle and Sequa," said the indignant girl flashing her black eyes upon the thoroughly squelched young man. Then she quickly turned and before Ted realized what she intended to do, she gave him a quick push which tumbled him over backwards and before he could scramble to his feet she had climbed up the rope and was on the ground

above and in addition had pulled the rope up with her.

"Wait. Oh please Marguerite wait. I have something I must tell you," pleaded Ted from below.

"No, Mr. Teddy. You can wait for a while and learn to be patient and less inquisitive. I'm going to find my Uncle and Sequa. I'll come back before dark, and I'm going to leave the rope up here, for I've got much to do and somehow you seem to be so helpless—I'm afraid you'd be in the way," she said with a pretty smile. Then Ted's heart gave a big thump as she threw him a kiss before she disappeared.

So he was helpless, was he? thought the exasperated young man as he tried to devise some way out of the cave for he felt sure that she was not strong enough to be left alone and anyhow she would probably get lost. He tried to imagine how she would get out of the cavern under the circumstances. From the wall he could just glimpse a part of the coiled rope as it lay near the skylight. Then he thought of the pile of branches and hastily turning these over he found three fairly long ones which would reach up to the hole, if he could find some way to fasten them together, for he had no more rope. Then he thought of the leather strap that held his pack together and with this he fastened two of them and the other he lashed with his belt. Five minutes of fishing with the top branch through the hole slipped the end of the rope down and a few seconds later he was outside.

THE snow was well trampled and stirred up where the girl had dragged the branches, but further away there were only three sets of tracks; two leading away from the cavern and one between them that was a returning trail, but which was the last outgoing trail Ted could not determine, so he followed one at a guess. This took him to the top of the mountain and then he could see where it followed the ridge and returned to the starting point so he had guessed wrong and was on the track she had made at dawn. Ted still had his binoculars in their clip so from this vantage point he picked up the other trail where it crossed a large ice field in the valley, and it led to the opposite side where he finally located the girl. She was but a tiny figure and hard to follow since her white fur clothing almost matched the snow. She had, however, let her hood fall back and her blue black hair was blowing in the wind and this gave a contrast that enabled Ted to follow her movements. She had almost reached some pinnacles of rock at the foot of the opposite ridge, when something happened that for an instant held Ted petrified. An almost fully grown grizzly bear rushed out from behind the rocks and charged straight at the girl, she dodged and made for the rocks but the grizzly was too quick and got between her and the outcropping rocks and again charged—but Ted saw no more for he turned and ran with every ounce of speed down the mountain side towards where the tragedy was about to happen. He knew he could not get there in time to be of any help and even if he did he had no idea of what he could do since he had no weapons. The rifle was in the cavern, and the last time he saw his sheath-knife, was when the girl was slicing the steak with it.

Across the ice he floundered, slipping and stumbling. The girl and the bear were quickly receding behind an ice hump in the distance, and the last glimpse he got was two specks suddenly merging into one, which meant that the grizzly had caught his victim. Ted spurred himself

to further efforts, caught his foot in an air hole, pitched over in a somersault and slithered along the ice for twenty feet with his right ankle paining so agonizingly that he thought he had broken every bone there. He set his teeth and tried to get back on his feet but found it was impossible for him to stand so he continued forward as fast as he could on his hands and knees. Progress was slow and excruciatingly painful, and by the time he reached the top of the hump it was too dark to see what had happened. The hump was caused by pressure ice and in trying to get over the broken jagged edges Ted slipped and tumbled into a fissure where, feeling too dejected and miserable to make any further efforts at progress, he lay among the ice splinters and wondered if he could last until the sun came up again.

"Why are you lying there and what is the matter?" said a well known voice.

Ted twisted his head and to his amazement and delight saw the girl again. She was crouching close to the fissure and looking very sympathetically down at him. She then reached down and grabbed his coat collar and before he had time to say anything she dragged him up to the surface and sat him on the edge and very gently said: "I hope you did not break your leg when you tripped in that air hole. Is it very bad?"

"Yes. No. I don't know," answered Ted all mixed up. "Say how on earth did you escape from that grizzly? I felt sure he'd get you."

'WHAT made you think I wanted to run away from that grizzly?" asked the girl evidently hurt at the suggestion she would run away from any animal. "Why it was the only thing you could do. You carried no weapon."

"But I did have a weapon and in future just you remember I am NOT afraid of any grizzly. Why they are quite dumb. I had your knife with me, I thought it too dangerous for you to have while you were acting so queer, so when that foolish animal stood up and tried to grab me all I had to do was to duck and stab him in the heart—it's quite simple."

"Gosh," exclaimed Ted. Then he added: "I tried to reach you but busted my ankle and fell into that fissure. Guess I really am sort of helpless after all," he admitted.

"Indeed you're not," cried the girl. "You thought I was in danger and you did everything you could to help me. I know because when I got back and found you had gone I followed your trail and found where you had tripped and fell and had tried to stand up and couldn't. Then I saw where in spite of your injury you still attempted to go where you had seen me and had crawled on your hands and knees—you're a brave man and I'll never forget you. Now let me help you back before it's too dark."

By leaning on her Ted managed to hobble along and by the straight cut they managed to reach the cavern before it was entirely dark. As Ted lowered himself, hand over hand, down the rope he saw to his dismay that the fire was entirely out and he remembered that he had used his last match in starting it. The girl, however, set to work getting a new fire laid and when everything was ready she selected a straight well-dried stick and holding it between her palms whirled it rapidly while pressing the end in a depression in a partly burnt block. In about a minute a little smoke arose and a few seconds later she succeeded in igniting a bit of

tinder wood which she blew into a flame and in a short time she had a large bonfire going and was cooking supper.

Suddenly Ted saw something near the wall, that he at first thought was a great wolf curled up, but as the fire brightened he saw it was only a skin.

"What is that over there, Marguerite?" he asked.

"That's the grizzly's pelt. I thought you might want to make a jacket and breeches out of it—Those funny clothes you are wearing won't last long. I suppose I'll have to stay and help you until your foot gets better. Somehow I can't understand how you have managed to live this long; and of all the places to pick for a home this damp, clammy cold hole in the ground is the limit—oh, what's the use," she finished failing to find words to express her disapproval.

"I wish you'd quit picking on me. I don't live here as I've told you before. You come to Boston some—no I want you to come back with me. I want you to marry me, Marguerite. Gosh, I've never felt about a girl this way before. I'll give you a home that is a real place——"

"Stop," the girl commanded. "You're getting mixed up and anyway you mustn't talk to me about marriage until you've got my uncle's consent, he's my guardian, and I'm afraid he'll never give it. You know you don't look very strong," she said stopping to eye him critically. Then she said frankly, "I really like you and perhaps I can induce my uncle to consider you and wait a while until you get your health back and become stronger. I'm going to hunt again in the morning for my uncle and Sequa, they must be somewhere around."

LISTEN, Marguerite dear, I can't let you go on thinking this way any longer. You might as well know that this is not the autumn of 1700 but—now don't get scared—it's the autumn of 1931. You don't know it but I found you embedded in solid ice at the lower end of this cavern and you have been there for over two hundred and thirty years. You are the most wonderful girl in the whole world."

"You poor boy," said the girl with sympathy. "I'm very much afraid you must have also bumped your head on the ice. You'll be all right in a few days."

"You listen to me Marguerite. This is no fairy tale. You've got to realize that you have been in a glacier for two hundred and thirty one years. At the end of this cavern where you saw all that gravel and debris, in all probability, is the hole through which you tumbled with all the snow and you've been frozen solid ever since. Look at my wrist watch, have you ever seen anything like that before? And my rifle has not had the flint lock removed; flint locks are only seen in museums now. See," he said picking up his high power rifle, "I don't have to pour any powder in this or use a ramrod. All that is necessary is just to slip in a cartridge like this, aim and fire," and Ted followed the words by action and the crack of the rifle followed the whine of the bullet down the cave startled her and she clapped her hands to her ears, but Ted noticed the very unusual fact that she did not utter a sound. Then without a word she took the rifle from him and examined it, slipped in a cartridge as she had seen him do, and fired it. Next she lifted his arm and inspected the wrist watch and also discovered she could see it in the dark. Ted with an inspiration took some change out of his pocket and handed it to her and she immediately looked at the dates. Suddenly she burst into tears.

"Listen dear, there's nothing to cry about," said Ted pulling her unresisting head against his shoulder and wondering what on earth she was crying for. "You'll soon make lots of new friends and you'll be famous the world over."

"That's just the trouble and the humiliation will be more than I can bear. It will be terrible to have women pointing at me and saying: 'Look! She carries her age well doesn't she—just think, my dear, she's over two hundred and fifty years old,' and then they'd laugh. I'll have to pass the remainder of my days in a convent."

"Great guns girl, don't let that worry you. Remember there isn't another being in the whole world who knows anything about this except us two—and we just won't tell anybody."

Marguerite looked up at Ted, smiled and suddenly gave him a most unexpected kiss.

Then Ted's sore ankle was entirely overlooked as he grabbed her in both arms.

"You cave man, you," she said softly.

THE END



The Good-Natured Pendulum

By Edward Everett Hale

THIS is a science fiction story based on the law of the pendulum. Few people realize how long a pendulum must be if its beat was to last several seconds. But here the time is made shorter. The law of the pendulum is invoked to carry out this story.. It was written by the author of one of the most famous stories in American literature, "The Man Without a Country."

Illustrated by MOREY

A N old clock which stood in the corner of Parson Whipple's school-room suddenly began to tick twice as fast as usual. It did so for two or four hours, according as you counted time by its beat or by an hour-glass. Then it ticked for the remainder of its life at apparently the same rate as usual. This was never a discontented pendulum; and on that day, Singleton and I, who were the only boys in its counsels, thought it was very good-natured.

But I do not pretend it was right. Have I said it was right for the pendulum to tick so? I have not said it. I have only said that it was good-natured in the pendulum to tick twice as fast as usual, when it simply knew that I wished it to do so. I am not holding up the pendulum as an example for other pendulums, or for readers of the *Atlantic*. I wish people would not be so eager in their lookout for morals. I have not even said that the pendulum is the hero of this story. I have only said that it was good-natured, and that, as before, it ticked as I then said. Having simply said that, and hardly said even that, I am attacked with this question, whether my story is moral or not, whether the pendulum did right or not; and you tell me coolly that you do not know whether you will take the magazine another year, if the conduct of such pendulums is approved in it. Once and again, then, although I was then responsible for what the pendulum did, I assert that I am not now responsible for it. I was then fourteen, and am now hard on fifty-six, so I must have changed anatomically six times since then. I reject responsibility for all my acts at Parson Whipple's. I do not justify the pendulum, I do not justify myself, far less do I justify Singleton. I only say it was a good-natured pendulum.

It happened thus:

We were all to go after chestnuts, and we had made immense preparation, the old dominie not unwilling. We had sewed up into many bags some old bed-tick dear, kind Miss Tryphosa had given us; we had coaxed Clapp's cousin Perkins—son of Matthew Perkins third, of the old black Perkins blood—we had coaxed him into getting the black mare for us from his father. Clapp was to harness her, and we were to have the school wagon to bring our spoils home. We had laid in with the Varnum boys to meet us at the cross-roads



I took a bradawl out of my pocket and unscrewed the pendulum from the bottom of the rod. I left it in the bottom of the box. I took a horseshoe from my pocket and lashed it with pack thread about a quarter of the way down the rod.

in the Hollow; and, in short, we were to give the trees such a laboring as chestnut-trees had not known in many years. For all this we had the grant of a half-holiday; we had by great luck a capital sharp frost on Tuesday, we had everything but—time.

Red Jacket would have told us we had all the time there was, and, if Mr. Emerson had come along, he might have enforced the lesson. But he was elsewhere just then, and the trouble with us was, that, having all the time there was, we wanted more. And no hard bestead conductor on a single-track road, eager to "make the time," which he must have to reach the predestined switch in season, ever questioned and entreated his engineer more volubly than we assailed each other as to how we could make the short afternoon answer for the gigantic purposes of this expedition. You see there is a compensation in all things. If you have ever gone after chestnuts, you have found out that the sun sets mighty near five o'clock when you come to the 20th of October; and if you don't get through school till one, and then must all have dinner, I tell you it is very hard to start fourteen boys after dinner, and drive the wagon, and walk the boys down to the Hollow, and then meet the Varnums and drive up that rough road to Clapp's grandmother's, and then take down the bars and lead the horse in through the pasture to where we meant to tie him in the edge of the hemlock second-growth, and then to carry the bags across the stream, and so work up on the hill where the best trees are; I say it is very hard to do all that and come out on the road again and on the way home before d^r. k. And if you think it is easy to do it in three hours and a half, I wish you would try. All is, I will not give sixteen cents for all the chestnuts you get in that way.

So, as I said, we wanted to make the time. Well, dear Miss Tryphosa said that she would put dinner at twelve, if we liked, and if we could coax the dominie to let us out of school then. So we asked Hackmatack to ask him, and Hackmatack did not dare to, but he coaxed Sarah Clavers to ask him. The old man loved Sarah Clavers, as everybody did. She was a sweet little thing, and she did her best! Old man, I call him! That was the way we talked. Let me see, he graduated in 1811—I guess he was in Everett's class and Frothingham's. The "old man," as we called him, must have been thirty-seven years old then,—Nineteen years younger than I am today. Old man indeed!

WELL, little Sarah did her prettiest. But the old man—there it is again—kissed her and stroked her face, and said he had given the school a half-holiday, and he thought his duties to the parents forbade his giving any more. And when little Sarah tried again, all he would say was, that, if we would get up early and be dressed when the first bell rang, we might "go in" to school at eight instead of nine. Then school could be done at twelve—Miss Tryphosa might do as she chose about dinner, but, if she chose, we might be off before one.

Still we wished we could make a little more time. And as it was ordered—wisely, I have no doubt—though, as I said, I do not pretend to justify the use we made of the order—as it was ordered—that very Tuesday afternoon, when we were all at work in the school-room, Brereton—that Southern boy, you know—was reciting in "Scientific Dialogues" to the Parson. I think it must have been "Scientific Dialogues," but I am not sure. Queer, I was going to say it was Pynchon, who has distinguished himself so about all those things since. But that is a trick memory plays you. Pynchon must be ten years younger than Brereton; I dare say he never saw him. It was Brereton—Bill Brereton—was reciting, and he was reciting about the pendulum. The old man told him about Galileo's chandelier, I remember.

Well, then and there I saw the whole thing in my mind as I see it now. Singleton saw it too. He was hearing some little boys in Liber Primus, but he turned round gravely, and looked me full in the face. I looked at him and nodded. Nor from that day to this have I ever had to discuss the details of the matter with him. Only he and I did three things in consequence of that stare and that nod—he did two and I did one.

What he did was to go into the dominie's bedroom, when he went up stairs after tea, take his watch-key from the pin it hung on, and put it into his second bureau drawer under his woollen socks. Then he went across into Miss Tryphosa's room, and hung her watch-key on a tack behind her looking-glass. He thought she would not look there, and, as it happened, she never did. Those were in the early days. Schoolboys had no watches then. I do not think they even wrote home for them. If they did the watches did not come.

I do not recollect that George then told me he did this; but I knew he did, because I knew he could. I had no fear whatever, when I went to bed that night, that the doctor would wind up his watch, or Miss Tryphosa hers. As it happened neither of them did. Each asked the other for a key, the master tried the gold key which hung at his fob, which had been worn out by his grandfather when he was before Quebec with Amherst. Both of them said it was very careless in Chloe, and both of them went to bed.

WE all got up early the next day, as we had promised. But before breakfast I did not go near the clock—you need no charge on me. I hurried the others—got them to breakfast—and ate my own speedily. Then I did go into the school-room ten minutes before the crowd. I locked both doors and drew down the paper-hanging curtain. I took a bradawl out of my pocket, and unscrewed the pendulum from the bottom of the rod. I left it in the bottom of the box. I took a horseshoe from my pocket and lashed it tight with packthread about a quarter way down the rod—perhaps two inches above the quarter. I put in a nail after it was tied, twisted the string round it twice—and rammed the point into the knot. Then I started the pendulum again—found to my delight that it was

very good-natured, and ticked twice as fast as I ever heard it—I shut and locked the clock door, rolled up the paper-hanging curtain, and unlocked the school doors. If you choose to say I went to the clock after breakfast, before school, that is true—I do not deny it. If you say I went before breakfast, I do deny it—that it not true. If you ask if it was right for me to do so—as you implied you were going to do—I do not claim that it was. I have not said it was right. All I have said yet is that the pendulum was good-natured. And I will always protest—as I have often done before—against these interruptions.

I suppose I was engaged three minutes in these affairs. I cannot tell, because the clock had stopped, and, when we are pleasantly employed, time flies. I was not interrupted. Nobody came into that schoolroom before it was time. In the Boston schools now they hire the scholars to be unpunctual, giving them extra credits if they arrive five minutes too early. If they knew, as well as I do, what nuisances people are who come before the time fixed for their arrival, they would not bribe the children in that direction. Certainly dear old Parson Whipple did not. We went in when the clock struck, and we went out when it struck. He had no idea of improving on what was exactly right. If he had read Voltaire, he would have said, "Le mieux est l'ennemi du bon."

So when the clock struck eight we rushed in. Reverent silence at prayers. I suppose my conscience pricked me; I have very little doubt it did—but I don't remember it at all. Little boys called up in Latin grammar. Luckily they were all well up, and gabbled off their lesson in fine style:—

"Amussis, a mason's rule.

"Bursis, the beam of a plough," &c., &c.

The lessons went down—one exception to each boy—with one halt; the master nodded with pleasure, and passed up to the first boy again; down it went again, and down again. These were bright little fellows; not one mistake—perfect credits all.

"It is a very good lesson," said the dear old soul. "It's a pleasure to hear boys when they recite so well. This will give us a little time for me to show you—"

What he was going to show them I do not know. He turned around as he said "time," and saw to his amazement that the clock pointed to 8.30. He put his hand to his watch unconsciously, and half smiled when he saw it had run down.

"No matter," said he, "We are later than I thought. Seats—algebra boys."

SO we took our places, and very much the same thing followed. Singleton and I were sent to the blackboards—for the dear old man was in advance of the age in those matters—and we did our very quickest. But Hackmatack had not our motive, and perhaps did not understand the algebra so well, so that he stumbled and made a long business of it, and so did the boy who was next to him. That boy was still on the rack, too much puzzled to see what Singleton meant by holding

up three fingers of one hand and one of the other, when the Parson said, "I cannot spend all the morning upon you; sit down sir," sent another boy to the board to explain my work, looked at the clock, and was this time fairly surprised to see that it was already half past nine. He seized the opportunity for a Parthian lesson to Brereton and Hackmatack. "Half an hour each on one of the simplest problems in the book. And I must put off the other boys till to-morrow." The other boys were a little amazed at their respite, but took the goods the gods provided without comment. We went to our seats, and in a very few minutes it was quarter of ten, and we were sent out to recess. Recess, you know, was quarter of an hour; it generally began at quarter of eleven, but to-day we had it at quarter of ten, because school was an hour earlier. I say quarter of ten because the clock said so. The sun was overcast with a heavy Indian-summer mist, so we could not compare the clock with the sun-dial.

The little boys carried out their lunch as usual, going through the store-closet on the way. But there was not much enthusiasm on the subject of lunch, and a good deal of generosity was observed in the offer from one to another of apples and doughnuts—which, however, were not often accepted. I soon stopped this by saying that nobody wanted lunch because we were to dine so early, and proposing that we should all save our provisions for the afternoon picnic. Meanwhile, I conferred with Clapp about the black mare. He said she was in the upper pasture, which was the next field to our sugar-lot; and he thought he would run across now and drive her down into the lower pasture, in which case she would be standing by the bars as soon as school was over, and he could take her at once, and give her some grain while we were eating our dinner. Clapp, you see, was a day scholar. I asked him if he should have time, and he said of course he should. But, in fact, he was not out of sight of the house before the master rang the bell out of the window, and recess was over. Even the little boys said it was the shortest recess they had ever known.

So far as I felt any anxiety that day, it was in the next exercise. This was the regular writing of copies by the whole school. Now the writing of copies is a pretty mechanical business, and the master was a pretty methodical man, and when he assigned to us ten lines of the copy-book to be written in twenty-five minutes, giving him five for "inspection," he meant very nearly what he said, as he generally did. I ventured to say to Hackmatack and Clapp, as we sat down at our form, "Let's all write like hokey." But I did not dare explain to them, and far less to the others, why the writing should be rapid. Earlier than that, my uncle had taught me one of the great lessons of life—"If you want your secret kept, keep it."

So we all fell to—

Time Trips for Triflers, But Flies for the Faithful, which was the copy for the big boys for the day. The little boys were still mum-mum-mumming in very

large letters. Singleton and I put in our fastest—and Clapp and Hackmatack caught the contagion. The master sat correcting Latin exercises, and the school was very still, as always when we were writing. How lucky that you never could hear the old clock tick when the case was shut and fastened! I should not be much worried now by the stint we had then, but in those days these fingers were more fit for bats and balls than for pens, and the up-strokes had to be very fine and the down-strokes very heavy. Still, we had always thought it a bore to be kept twenty-five minutes on those ten lines, and so we had some margin to draw upon. And as that rapid, good-natured minute-hand neared the V on the clock I finished the *u* in the last "faithful"—having unfortunately no room left on the line for the *l*. Hackmatack was but a word behind me, and Clapp and Singleton had but a few "faithfuls" to finish. Why do boys think it easier to write their words in columns than in lines? Is it simply because this is the wrong way—O shade of Calvin!—or that the primeval civilization still lingers in their blood, and the Fathers wrote so, O Burlingame and shade of Confucius?

We sat up straight, and held our long quill pens erect, as was our duty when we had finished. The little boys from their side of the room looked up surprised; and redoubled the vicious speed by which already their *mums* had been debasing themselves into *uiuini* with the dots in the *i*'s omitted. Faithful Brereton and Harris and Wells—I can see them now—plodding on unconscious; I could see that none of them had advanced more than a quarter down his page.

For a few minutes the dominie did not observe our erected pen-feathers, so engrossed was he in altering a "sense line" of Singleton's or somebody's. The "sense" of this line was, that "the virtuous father of Minerva always rewarded green conquerors," such epithets and expletives having suggested themselves from Browne's *Viridarium*. But the last syllable of "Palladis" had got snagged behind a consonant, and the amiable dominie was relieving it from the over-pressure. So we sat like Roman senators, with our quill sceptres poised—not coughing nor moving, nor in any way calling his attention, that the others might have the more time. And the little boys fairly galloped with their *mums*. But our sedate fellows on the other form plodded painfully on—and had only finished seven lines when Mr. Whipple looked up, saw the senators and the sceptres, and said, reproachfully: "You cannot all have hurried through that copy! The chestnuts turn your heads." With the moment he turned his, to see that the minute-hand had passed a full half-circle. "Is it half past?" he said innocently. "I beg your pardon; but among the Muses, you know, we are unconscious of time. Well, well, let us see. Rather shabby, George—rather shabby; not near so good as yesterday;

'Some Strains Are Short and Some Are Shorter';
and you too, Singleton. I do not know when you have been so careless—you both of you are in such haste.

See, Wells and Harris have not yet finished their lines.

Wells and Harris I think were as much astonished in their way; for it was not their wont to come in sixth and seventh—fairly distanced, indeed—on any such race-course. But there was little time for criticism. That good-natured pendulum was rushing on. The little boys escaped without comment on those vicious *m*'s, and, if there were anything in the system, each one of them ought to write "commonwealth" now, so that it should pass the proof-reader as "counting-house." But there is not much in the system, and I dare say they are all bank presidents, editors, professors of penmanship, or other men of letters.

THE clock actually pointed at quarter of eleven! Now at 10.30 we should have been out at recitation, translating Camilla well over the plain. We had thrown her across the river on a lance the day before. We shuffled out, and I, still in a hurry, had to be corrected for speed by the master. I then assumed a more decorous tone, his grated nerves were soothed as he heard the smooth cadences of the Latin—and then, of course, just the same thing happened as before. The lesson was ninety lines, but we had not read half of them when Miss Tryphosa put in her head to look at the clock.

"Beg pardon, brother, my watch has run down. Bless me, it is half past eleven!" And she receded as suddenly as she came. As she went she was heard asking, "Where can the morning have gone?" and observing to vacant space in the hall, that "the potatoes were not yet on the fire." As for the dominie, he ascribed all this to our beginning the Virgin too late; said we might stay on the benches and finish it now, and gave the little boys another "take" in their arithmetics, while we stayed till the welcome clock struck twelve.

"Certainly a short morning, boys. So much for being quiet and good. Good-day, now, and a pleasant afternoon to you." It is at this point, so far as I know, that my conscience, for the first time, tingled a little.

A little, but, alas, not long! We rushed in for dinner. Poor Miss Tryphosa had to apologize for the first and last time in her life! Somehow we had caught her, she said. She was sure she had no idea how—but the morning had seemed very short to her, and so our potatoes were not done. But they would be done before long—and of course we had not expected much from a picked-up dinner, an hour early. We all thanked and praised. I cut the cold corned beef, and we fell to—our appetites, unflunched, beginning to come into condition. My only trouble was to keep the rest back till Miss Tryphosa's potatoes—the largest a little hard at heart—appeared.

For, in truth, the boys were all wild to be away. And as soon as the potatoes were well freed from their own jackets and imprisoned under ours, I cut the final slices of the beef. Hackmatack cut the corresponding bread; the little boys took galore of apples and of

doughnuts; we packed all in the lunch-baskets, took the hard eggs beside, and the salt, and were away. As the boys went down the hill, I stopped in the school-room, locked the doors, drew the curtain, opened the clock, cut the packthread, pocketed the horseshoe, screwed on the bob, and started the pendulum again. A very good-natured pendulum indeed! It had done the work of four hours in two. How much better than that sulking, discontented, for a whole hour, in the corner of a farmer's kitchen!

Miss Tryphosa and her brother had the feeling, I suppose, which sensible people have about half the days of their lives, "that it is extraordinary the time should go so fast!" So much for being infinite beings, clad for only a few hours in time and clay, nor wholly at home in those surroundings.

Did I say I would write the history of that chestnutting? I did not say so. I did not entitle this story "The Good Chestnuts," but "The Good-natured Pendulum." I will only say to the little girls that all went well. We waited at the foot of the hill for a few minutes till Clapp and Perkins came up with the mare and wagon. They said it was hardly half an hour since school, but even the little boys knew better, because the clock had struck one as we left the school-house. It was a little odd, however, that, as the boys said this, the doctor passed in his gig, and when Clapp asked him what time it was he looked at his watch, and said, "Half past ten."

But the doctor always was so queer!

WELL, we had a capital time; just that pleasant haze hung over the whole. Into the pasture—by the second-growth—over the stream, into the trees—and under them—fingers well pricked—bags all the time growing fuller and fuller. Then the afternoon lunch, which well compensated for the abstemiousness of the morning's, then a sharp game at ball with the chestnut burrs—and even the smallest boys were made to catch them bravely—and, as the spines ran into their little plump hands, to cry, "Pain is no evil!" A first-rate frolic—every minute a success. The sun would steal down, but for once, though we had not too much time, we seemed to have enough to get through without a hurry. We big boys were responsible for the youngsters, and we had them safely up on the Holderness road, by Clapp's grandmother's, Tom Lynch driving and the little ones piled in—Sarah Clavers in front—with the chestnut-bags, when the sun went down.

By the time it was pitch dark we were at home, and were warmly welcomed by the master and Miss Tryphosa. Good soul, she even made dip-toast for our suppers, and had hot apples waiting for us between the andirons. The boys rushed in shouting, scattered to wash their hands, and to get her to pick out the thorns, and some of our fellows put on some of the chestnuts to boil. For me, I stepped into the school-room, and, in the dark, moved the hour-hand of the clock back two hours. Before long we all gathered at

tea—the master with us, as was his custom in the evening.

After we had told our times, as we big boys sat picking over chestnuts, after the little ones had been excused, Miss Tryphosa said, "Well, boys, I am sure I am much indebted to you for one nice long afternoon." My cheeks tingled a little, and when the master said, "Yes, the afternoon fairly made up the shortcomings of the morning," I did not dare to look him in the face. Singleton slipped off from table, and I think he then went and replaced the watch-keys.

The next day, as we sat in algebra, the clock struck twelve instead of ten. The master went and stopped the striking part. Did he look at me when he did so? He is now Bishop of New Archangel. Will he perhaps write me a line to tell me? And that afternoon, when Brereton was on his "Scientific Dialogues," actually the master said to him, "I will go back to the last lesson, Brereton. What is the length of a second's pendulum?" "And Brereton told him. "What should you think the beat of our pendulum here?" said the doctor, opening the case. Brereton could not tell; and the master explained; that this pendulum was five feet long. That the time of the oscillations of two pendulums was as the square root of the lengths, Brereton had already said; so he was set to calculate on the board the square root of sixty inches, and the square root of the second's pendulum, 39.139. I have remembered that to this day. So he found out the beat of our pendulum—and then we verified it by the master's watch, which was going that afternoon. Then with perfect cold blood the master said, "And if you wanted to make the pendulum go twice as fast, Brereton, what would you do?" And Brereton, innocent as Psyche, but eager as Pallas Athene, said, of course, that he would take the square root of five, divide it by two, and square the quotient. "The square is 1.225," said he, rapidly. "I would cut the rod at one foot two and a quarter inches from the pivot, and hang on the bob there."

"Very good," said the master; "or, more simply, you move the bob up there quarters of the way." So saying he gave us the next lesson. Did he know, or did he not know? Singleton and I looked calmly on, but showed neither guilt nor curiosity.

Dear master, if there is ink and paper in New Archangel, write me, and say, did you know, or did you not know? Accept this as my confession, and grant absolution to me, being penitent.

Dear master and dear reader, I am not so penitent but I will own, that, in a thousand public meetings since, I have wished some spirited boy had privately run the pendulum-bob up to the very pivot of the rod. Yes, and there have been a thousand nice afternoons at home, or at George's, or with Haliburton, or with Liston, or with you, when I have wished I could stretch the rod—the rest of you unconscious—till it was ten times as long.

Atlantic on the first page indicates the magazine.

~~DISCUSSIONS~~

In this department we shall discuss, every month, topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine. In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

Mr. Campbell Sends Us a Very Interesting Communication, Which Is Timely on Account of the Many Stories Which He Has Written for Us

Editor, AMAZING STORIES:

Mr. Marvin G. Moore has objected strenuously to my use of the molecular motion drive. He protests that it violates Newton's laws.

As a matter of fact, I must agree with him in so far as operation in Space is concerned, for under those conditions it does. But in the atmosphere of a planet this is not necessarily true. There acceleration can be produced under those conditions by reaction on the molecules of the atmosphere.

But—it was an idea, and an interesting idea, I believe. That such a device could produce power and motion on Earth, I maintain. An author's duty is to amuse, and to suggest interesting or new ideas. If my stories have done that, they were good stories, and why not overlook an occasional slip? As all readers of the magazine must realize, every story written has some fallacy, and in every case the author strives to divert the attention from the fallacy, as the magician attempts to divert the audience from his operations. The magician cannot actually perform what he seems to achieve, no more can the author actually explain what he seems to explain, and describe. But the magician's tricks are interesting as tricks, more so because the fault is there—and the audience knows it. I haven't written a story yet that didn't have some fault, but many of them have not yet been brought to light. The fault must be there, for I am describing a machine or process of tremendous commercial value. If the thing could be accomplished as I say, would I not have patented it?

Perhaps as a machine it is unsuccessful, but as a fictional machine it may yet make an interesting idea.

Eric Durand has not criticised me directly, but practically the entire field of science fiction. I am boldly willing to challenge even Eddington to prove anything whatsoever concerning life on other worlds, worlds, furthermore, which he never saw, and never can see. The entire field is purely philosophic speculation. Wherefore, my speculation is as sound as the next man's. We who do not even know what life is, are surely poor ones to say what it will and will not do.

You say it will not be human-like. Let us assume that, whatever the form of life, it has invented a steam engine. I can describe the steam engine in general terms, because I know the basic needs of any steam engine. Similarly there are certain basic needs of any in-

telligent form of life. First, it must have size sufficient to free it of most inimical forms of life. An intelligent rabbit would not be a successful form, because it would have too many enemy life-forms, too many larger carnivorous creatures, and would spend its time fighting them off. Second, it must be small enough to have agility. An elephant is highly intelligent. But he sought safety from attack in massive strength, and failed to develop an active mind. Man is just small enough to have enemies, large enough to fight them, and agile enough to climb a tree and escape them.

It must also have a tool. The hand is ours, and no better life-form has developed here on earth. We can conceive of none, I'm sure, for the hand can pick up anything from a needle to a good-sized tree-trunk with the aid of the rest of the body. The tentacle of the octopus is not as good, because it will not perform as many feats. The hand and arm of man can serve as a bludgeon, or battering ram, for pushing and for pulling. A tentacle will not pick up a needle, nor is it effective as a battering ram.

That suggests some of the basic ideas and designs a life-form must incorporate for supremacy. Probably the most important of all is the tool. But not *too* good a tool. An example of the latter is the ant, who has a tool for every purpose growing on him, instead of making them. The tools are good, but too specific.

And his comments on rays seem to me to reach beyond his ability to predict. "The X-ray Cosmic ray band will show . . . no profound physiological effects," he maintains. But that we already know is wrong. The gamma rays of radium lie in that group, and they produce a most profound physiological effect on any living cell. Cosmic rays at the one end of that band destroy atoms. Certainly, if cosmic rays can break up atoms, they will have physiological effects on beings composed of atoms! X-rays are used extensively today for treatment of physiological disorders. They can cause mutation of species even! The fruit-fly experiments show what effects they can have.

And the ultra-violet band has mysterious physiological effects that we have just begun to glimpse. The latest experiments have actually confirmed the superstition of the "evil-eye"! Men, some more than others, radiate from their eyes some form of energy capable of destroying life! A death ray—radiated from the eye! Isn't that the "evil-eye"? This radiation has been proven capable of killing yeast plants, when a man merely looks at them!

"The Gravity Control School" certainly cannot be classed as useless! Such an invention would not be. If, as scientists believe, gravity is due to a curvature of space, then to locally flatten that curve would remove the cause of gravity. We can, to-day, cause curvature in space artificially. Is gravity beyond us then? Space is "curved" or strained in the field of an ordinary electro-static condenser. Perhaps not the same type of curvature—but a curvature proving that space is not entirely beyond our control. And the conservation of energy would not be violated, either, for to locally flatten the curvature would require an amount of energy equal to the potential energy of the body degravitated at infinite distance. It is not meaningless—merely beyond what we know to-day. And not so very far beyond.

No one to-day can say, "I have proved." But people do, meaning they have shown very good reason for believing it. Ever hear that you can't prove a body will drop if held three feet above the ground? A stone, for instance. To prove it would require absolute knowledge of the future—which we can't have. But stones so treated always have dropped. Therefore we have a darned good reason for believing it will the next time. That's the only proof, the only kind of proof, we can give. And it isn't proof.

John W. Campbell, Jr.,
Wilson, N. C.

(Mr. Campbell's letter reads as well as his stories. It is certainly very interesting to get the point of view of a man like him about scientific points. We have always to remember that stories which we give are definitely imaginary and there is no issue of proof or falsehood involved. It allows room in science fiction to stretch the truth up to the breaking point, but it must be a very good author who can do it, so we leave Mr. Campbell to our readers, as he has expressed himself very fully and very well.—Editor.)

A Letter That Speaks for Itself
Editor, AMAZING STORIES:

I hope that the February issue cover of AMAZING STORIES satisfies some of those who were continually harping about the cover.

As for me while it makes no difference at all, still I found it necessary to look for it, as I did not recognize it in the new dress until I saw the words "AMAZING STORIES."

While it seems to me that some of the

critics could improve their criticisms by revision, still, I suppose that criticism is The Oil of Joy to some, and they cannot get along without it.

As far as I am concerned, the stories that do not appeal to me, why I just forget them, though they would have to be very poor if I could not get at least a little out of them.

As long as you keep improving AMAZING STORIES at the rate you have been doing you will satisfy me, and, I believe the greater part of your readers.

So let us give the Editor at least an even break, for he has his troubles just like the rest of us.

In conclusion I will say that I have a lot of back numbers (including the Skylark Series by E. E. Smith), that I will sacrifice as I have not the room to keep them.

If any of your readers want them they can get in touch with me.

Yours truly,
John Lange,
Mercedes, Texas.

(Of course it is impossible to give stories which appeal to everybody and we are glad to give your very common sense and excellent letter a place in our columns. We think you take the right point of view.—EDITOR.)

Comparisons

Editor, AMAZING STORIES:

I have been reading AMAZING STORIES for the past two years and I must admit that it is the best magazine on Science-Fiction on sale today. I have tried all the others but AMAZING STORIES is the best.

I think the new cover design is very good. The January cover was much better than the February cover because the red figure on the February issue is very misleading. I agree with Harvey W. Jefferson, Jr., on the point that the appearance of the magazine is very deceptive.

I like stories about other systems besides our own Solar System. Some of the stories I liked most were "Faster Than Light," "Crusaders of Space," and "The Eternal Mask." I think Harl Vincent beats all the other authors. One of his best stories was "Faster Than Light." I also think that "The Stone from the Green Star" ought to have a sequel.

The AMAZING STORIES as a whole "can't be beat" by any other magazine of Science-Fiction. I enjoy the magazine very much and I wish it a very prosperous future.

Charles Weeks,
257 Canistee Street,
Hornell, N. Y.

(There is a proverb which says that comparisons are odious, but we cannot find anything odious in your comparison of AMAZING STORIES with other magazines, because you put us on top of them all. We print your compliments with great pleasure, and hope that we shall continue to merit even more of them.—EDITOR.)

Artists and Stories

Editor, AMAZING STORIES:

I wish to congratulate AMAZING STORIES on its anniversary. I have watched "our magazine" in its ups and downs for seven years, and it has generally maintained its position at the top of this type of mag. I loaned Vol. 1, No. 1, together with several other of the early issues, and they were never returned, but I still have the issue of "Science and Invention" which announced the debut of A. S.

Now, some remarks on the most revolutionary change since the Spring of 1929—the new cover. I like it all right—the March cover is much better than the two preceding. But, do you remember the cover of the one and only A. S. Annual? If all the old-type covers had maintained that standard I do not believe you would have changed. Now, turn to the issue, August, 1929. In comparison, the March, '33, cover is a masterpiece. I haven't seen Wesso's work lately in any mag. Would it be possible for you to have him do the inside illustrations on at least the best stories? Morey's work on "Beyond the End of Space" is good.

I suppose you already know that the stories "Moon Pool," "Skylark Three" and "Invaders from the Infinite" are the best stories of their type ever published, but if John W. Campbell uses "Beyond the End of Space" as the basis for a series of stories, similar to the one of which "Piracy Preferred" was the first, he may work up to a story which will exceed "Invaders from the Infinite." It appears, in part one of his latest story, that Ran Warren is beginning where Arcto, Morey and Wade left off. But it is difficult to conceive of a bigger and better story than his novel in the Spring, '32, Quarterly. (I notice the Quarterly is becoming a Semi-Annual). Incidentally, the stories in the January issue were not well balanced—there should have been one super-scientific story to balance the issue. The March issue is at par, if not above. I haven't read the Feb. issue, as yet.

Speaking of revolutionary changes; don't change the size or price of A. S. If anything, use cheaper paper, etc., and give us more original stories, more pages. It's the stories that count (to we old STF bugs, anyway.) And I always read Discussions first. You can't improve the index or editorial pages, they're O.K.

In reference to the discussion on slang in stories: the "slang" in E. E. Smith's stories seems to "come natural". In some stories it would seem a forced effort, but in these stories it seems to make them run more smoothly. And there is no offensive slang in them. Sven Anderson uses slang in his "mob" stories, and it lends color, effectively, although it is a different type than that used by Dr. Smith. The "Doc" mixes just the right amount of casual English with precise English.

As for those questions of mine which you published last year I have received an attempted answer to only the first of them. Looking over the newsstand the other day I saw, in another STF mag, someone else asking questions. In line

with this person's questions, and to keep the ball rolling, may I ask P. Schuyler Miller. "How did the energy of the Universe get to the high level so it could run down to the "heat-death"?" John Campbell's latest stories have helped to answer some of my former questions, but perhaps he and Einstein are both wrong. Well, that's enough foolish questions for this time. Perhaps this letter is becoming too long, so I'll stop right here.

L. M. Jensen,
Lovell, Wyo.

(Morey is now doing practically all our illustrating and will probably do so for some time to come. We find our readers consider that he is constantly improving. In a letter which we have just read a correspondent made a violent attack on Mr. Campbell. The majority of our readers who write to us consider him our best or second best writer and of course we have to be guided as far as possible by the views of the majority of our readers. Dr. Smith and Mr. Campbell, we find from our correspondents, average out about one equal to the other.—EDITOR.)

A Capital Letter from the Secretary of the I. S. A.

Editor, AMAZING STORIES:

My gosh! Mister Editor: Can't something be done about this? Here's a letter complaining "Discussions" is becoming a species of battleground, etc. What does he mean? *Becoming!*

The first letter printed in A. S. (before there was any "Discussions") started a battle I know because I was in the battle myself. So was the Editor; that's how that first letter got printed. And while I can't verify the thought, since all my back-numbers are in California, I believe the second letter printed (the first in "Discussions") also started a war.

"The Tomb of Time" was in parts a nightmare for me though a good story. At first I thought Tooker knew his stuff even if he did confuse the terms prehistoric and primitive. It wasn't his fault Morey put bat's wings on a pterosaur. But "the human species in a reptilian stage of evolution"; "halfway between the European pterodactyl and the American archeopteryx". The description doesn't check and the archeopteryx was European. I won't give more 'cause it'd make the letter too long.

I agree that there is little danger of English breaking up into different languages. The radio and phonograph and sound films will tend to universalize, though not stabilize the language. But I do not agree with those who think a common language will make everything rosy and eliminate all misunderstanding and hence wars. Look at all the wars that have been waged between people who not only had the same language, but lived in the same country and recognized the same king. And look at Switzerland where people speaking four languages do not have wars. Language is not the answer to the question at all.

I have already told you what I think of the January cover. The February was

better and I think the March would be still better if it weren't for the lettering. I think the main trouble is the heavy black (well-anyway it looks black) outline, but the white would clash some by itself. I don't like the shapes of the letters, but that is a personal matter. Can't you try the old tapering title with the new-style art? It used to be said that the old covers which were more glaring than striking drew new customers. Different kinds of covers draw different kinds of customers, so it would be a good idea to change cover-styles every once in a while.

Anthropology doesn't really deserve to be classed as a science, but it may be some day. We're trying hard, but having little success.

It is hard to explain a lot of things man does and the urge to decorate oneself is often the only explanation for painting the face or body. As a matter of fact a solid black object is easier to see in the jungle than the Indian brownish color. And that trick of moss on trees will only work where the south and east and west sides of the trees are where the sun will shine on them and dry them out, while the north side stays damp. If Donald Schol can find any trees I suggest he see how much longer it takes the snow to melt due north from them and how far back from the tree the unmelted snow reaches. But if the tree is in a forest the moss (or snow) has shade from other trees too and if the tree is in northern South America the sun will shine on the north side of it part of the year.

Noah McLeod's criticisms are only partially valid. In the first place it is not certain that the value of π is constant under all conditions. His criticism regarding the mechanical equivalent of heat are valuable, but perhaps a little severe. The heat need not all be projected from the weapon. But an undescribed object is not a scientific device and a story with nothing but "ready-made" ray-guns and space-ships is not a science fiction story. As to the vibration of the earth the story begins some time after the vibration does and the period of vibration could be shortened faster at first than later.

The first printed issue of COSMOLOGY (organ of the ISA) should be out soon. There will be an article by Willi Ley in it.

Clifton Amsbury,
Secretary, ISA,
1312 I Street,
Lincoln, Nebraska.

(Our personal feeling about the Discussions is that they are a very interesting part of the magazine and we like to see them figuring as a species of battleground. The Miss Robb-Dr. Smith battle, characterized by utter good humor on both sides, and carried on by two contestants, neither of whom would yield a particle to the other, we found to be very good reading. It is quite an honor for you to be in the first of the Discussion battlers, at least we feel it so. The wings of the pterosaur may very properly be compared with the wings of a bat, even if there may not have been as many fingers represented in them. Perhaps Mr.

Tooker will take up arms so as to give us another battle. We hope he will. The American Revolution showed that nations with an identical language would fight each other even if George the Third sent German mercenaries over to fight for him, and in the War between the States, both sides spoke English, the Union and Confederates alike. We will be very glad to see the next edition of Cosmology and we may hope that your letter will bring some interesting additions to Discussions.—EDITOR.)

(If one wants to try whether one man's meat is another man's poison, as the proverb has it, he should try to edit a magazine, or what is nearly as good, read the Discussions in our columns in which we give a great many letters. It is curious to see how different correspondents take our efforts to make AMAZING STORIES good. We are sure that you will hear from some of our readers who are in the market for back numbers.—EDITOR.)

Magazines and Quarterlies Offered for Sale by One of Our Readers

Editor, AMAZING STORIES:

I noticed in an editorial comment on one of the letters published in your "Discussions" column recently that you were completely out of the Quarterlies. I have an entire set of these as well as the monthlies and, if you still need them, would be glad to let you have as many as you need at a reasonable figure.

If you do not wish to buy these copies I would appreciate your telling me the addresses of any persons who might be interested.

Yours truly,
S. H. Penny, Jr.,
4701 Pitt Street,
New Orleans, La.

(If you will glance through our columns, you will find many readers who wish back numbers, but as a most direct method we would suggest your writing to the Subscription Department, AMAZING STORIES at 222 West 39th Street, N. Y. They are always anxious to get back numbers to supply the demand and so many people have been buying them that we are short of them in our own department.—EDITOR.)

A Letter of Flattering Criticism

Editor, AMAZING STORIES:

Possessing and having read every issue of AMAZING STORIES MONTHLY, I wish to say I have noticed a decided improvement in the last few issues. I confess at one time a few years ago I had decided to quit reading it, because almost every story was an interplanetary story. Now, however, the trend has changed. An interplanetary story once in a while is all right, but personally I prefer stories of biology, chemistry, science-adventure and science-mystery.

"The Treasure of the Golden God" by A. Hyatt Verrill—my favorite author—is the best story in months.

Now for the real purpose of this letter. I notice in the last letter in the Discussions Department in the February issue you say the old-time Quarterlies are unobtainable. I have Vol. I—Nos. 1, 2, 3, 4. Vol. 2—Nos. 1, 2, 3, and 4 and Vol. 3—No. 1 of AMAZING STORIES QUARTERLY and Vol. 1—No. 8, November, 1926 of the monthly, of which I happen to have an extra issue, all for sale. Will send them postpaid to anybody (in this country) for three dollars.

Arthur Crumrin,
Chandlerville, Ill.

A Letter Appreciative of the Troubles of an Editor

Editor, AMAZING STORIES:

Dear Sir:

I am a reader of AMAZING STORIES since several years, and have no complaint whatever to make. I believe you have gradually improved your magazine, although it must become increasingly difficult to obtain stories with really new ideas about the topic of interplanetary travel for instance. Some of your very severe critics, produce the humorous impression of men (or boys) who take here their only chance to see their opinion in print, which seems to stimulate them to even greater efforts in the line of the toughest noise-making. I admire your infinite patience in answering these letters. I am a great admirer of Hyatt Verill, Captain Meek and Dr. Breuer. I also like Dr. Smith's and Dr. Campbell's stories, but although I have no perfect command of the English language, and moreover have "roughened it" throughout the jungles and mountains of South America since many years, I can't help feeling greatly disturbed by the exaggerated use of slang (although I understand it perfectly, due to long practice) and I consider that a fundamentally refined person, is bound to feel irritated by it. So here goes a cheer for Miss Robb. On the other hand, to be just, I shall tell you of an interesting experience: Whilst "listening in" on the Schenectady Station, the other night, this station turned to some testing and repair work, and imagine my surprise, when those real radio-experts used exactly the "Arcott-slang." By some chance I was lucky enough to hear short orders and conversations, probably not intended for the microphone. It is a sad world after all. But I guess we have to stand it. I wish you a successful year for your magazine.

C. W. Bruening,
Mérida, Venezuela.

(We have published so much about slang in stories, that a pretty good idea about the consensus of opinion on the subject may be obtained from the Discussions. We certainly enjoyed Miss Robb's letters. She was utterly good humored throughout in her correspondence, but never yielded an inch. Your anecdote about the slang used in the Schenectady station is, to say the least, illuminating. —We shall hope to hear from you again as such letters as this one are most interesting and valuable. Your English is very good.—EDITOR.)

A Letter of Severe Criticism
Editor, AMAZING STORIES:

As a reader of *AMAZING STORIES* from its first copy I don't doubt but what I am the only one left who has never before availed himself of the opportunity of writing to your Discussion Department. Ever since I was a small boy Science-Fiction has interested me second only to Science itself. One craving is satisfied by reading Science-Fiction stories, the other by teaching Chemistry in a high-school.

As some men have hobbies of stamping or coin-collecting, mine is that of stories in which Science is embodied, of the far future, strange worlds, people, etc. Again as some men could take one into their den and proudly display row upon row of interesting objects that they have collected throughout their lifetime, so I can take him into probably one of the most extensive libraries composing the one particular branch of literature, Science-Fiction. I, too, have been years gathering it, only the choice stories regardless of whether they be in book form or magazine form, by an American author or a foreign one. One of the main reasons I am breaking my long silence and writing you is to thank you for the numerous contributions A. S. has made to my library and for the many hours of pleasure it has afforded me. I hope it will not necessitate your employment of a Professor of correct English to point out to you my having made use of the "past tense" in speaking of said contributions and hours. Yes, much as I deplore it I can no longer deny that your magazine has degenerated sadly and today is no longer what it originally set out to be, a magazine consecrated to Science. Thinking back the nearest I can place the first signs of decline appears to be around about the time of A. S.'s transferred ownership and consequent change in editorial staff. One of my main beliefs for this is that the Gernsback publications still retain their initial high aim and qualities. I don't know of a better way to explain my meaning than to say, the soul of A. S. seems to have left it and fled to—(not to mention the choice authors and artists) I have quite taking A. S. and hardly ever read a monthly though every month I thumb through them at the newsstands in the forlorn hope that they have reverted back to their old style. I still take the Quarterly but will be perfectly frank and say that the only thread that is holding me to it is one author, namely Stanton A. Coblenz. It has been many a month since a monthly appeared that I considered worth reading let alone binding and keeping. There is no use for you Editors and fans to argue with me that matters are otherwise, the proof is before all our eyes. Take for instance the January, 1933, A. S. I bought this copy expressly for this purpose. On the outside cover you have the audacity to print "SCIENTIFICKTION." Let us take a look at the contents. There is one serial and five complete stories. "The Treasure of the Golden God," the serial is an adventure story, jungle tale. "The Pool of Death," decidedly a detective story. "The

Last Earl," a ghost story. "Delilah," a rank, love story. This leaves two remaining stories, the only ones with the least trace of Science in them. "Radicalite," nothing more than would be the notes taken on a vague and uncompleted experiment. "Omega the Man" was the best story of the whole bunch and is, as you stated, reminiscent of Poes works. All the while reading it though I could not help but be amazed how exactly the plot of the story corresponded with the life history of *AMAZING STORIES*. "Omega," once great, dying and perishing, his water disappearing could easily have been A. S. with its authors and artists taking the place of the melancholy lake. Like the father, chastising his little boy, who told him "this hurts me more than it does you" so am I in speaking of A. S. I mourn its fall more than you do; why some of my prize stories making up my magazine collection are from past A. S. and if they are ever equalled let alone surpassed I will be surprised. Now if I had only been born with a mania for collecting detective stories, legends, ghosts, or love mush, I would at the present time find unlimited material in A. S. for the above types of stories, all excellently written ones of their particular kind. Why advertise one kind and print another, strike off the word "SCIENTIFICKTION" on your cover, I am sure you will have no trouble making your stories come under the heading of just simply "Amazing Stories". Were I an editor I would much prefer to start a publication low and raise it than to start high like *AMAZING STORIES* did and end up like it has, no doubt you realize this by now in terms of dollars and cents. However in closing, my friend, to show my feelings lets us clink glasses and drink a toast to the good old days gone by, never to return I fear.

James C. Greyville,
 115 So. East 25th Street,
 Oklahoma City, Oklahoma.

(It is interesting to read about your Science Fiction Library. It is not the only one in existence, we have one in this city, collected by a devotee to science fiction and which has taken the owner many years to collect. We will let your criticism of *AMAZING STORIES* speak for itself. We are printing it next to some letters of an entirely different tenor so that you can see that you do not agree with other correspondents. As regards the word scientific, we are trying to get rid of it, but it seems to crop up in spite of everything we can do. It is a coined word and we will be glad when we see the last of it. We cannot take it off our cover as it does not appear on it. It is not on what you call the "outside cover" of the January issue. You should cultivate accuracy of statement.—EDITOR.)

The First Letter from One of Our Readers
Editor, AMAZING STORIES:

Though I have been a reader of your "mag" for a number of years, this is my first letter to your "Discussion" page. Being a Geologist with the longing for the "Wide Open Spaces" and another

human blessed with an imaginative mind, I find real pleasure in the stories found in A. S.

How can I ever begin to put into words, the amount of satisfaction I have derived from them! There is one thing that DOES make me a trifle sad! Your story, "Celestial Pioneers" in this Quarterly. Why, Oh WHY! Can there be a SEQUEL to such a story?

That is a story that leaves TOO much for the imagination. After reading it, I spent a sleepless night trying to figure out the future of those "Pioneers" who braved death, so that they might live in harmony—free from the discordant strife, and greed that ACTUALLY exists on this earth!

I heartily congratulate Mr. Ohmert on this story. I can only hope that he will be kind enough to give us a continuance in the near future. I fail to see why so many critics pick on your "mag" to sharpen their claws. Perhaps they never heard of that ancient proverb: "Only those who know more than the author, should criticize!!!"

My sincere wishes for a most successful Year!

R. C. Tarrant, Jr.,
 Cut Bank,
 Montana.

(We print this very nice letter of yours for Mr. Ohmert's information. You may not believe it, but we want criticism and if it is unfavorable we are more disposed to put it in than otherwise. It so happens, however, that a number of complimentary letters seem to have come together, so we put them in hoping that we have deserved the kind remarks contained therein.—Editor.)

The Best and the Worst of It
Editor, AMAZING STORIES:

I just wish to advise you that in my opinion your magazine is at the present the best of its kind obtainable. At one time in the past it was the worst, but lately it has improved greatly. Your stories are now more like the old type of science fiction that appeared in the magazine from 1926 to 1929.

For goodness sake, leave out the "physiological" type of stories, dealing with the nerves and emotions of humans. They may be science fiction, but I think they are just so much waste of space. Stories such as "The Treasure of the Golden God," "The Tomb of Time," and "The World of the Living Dead," show a great improvement over the last year or two, but their type have been few and far between for a long time.

If any of your old readers will remember such masterpieces as "The Second Deluge," "The Sixth Glacier," and "The Moon Pool," I am sure that they will realize how greatly the standard of the stories has fallen since those days.

But, keep up the recent improvement, including the new type of cover (but get Paul and Wesso back for the inside illustrations), and perhaps before long we will have a really good magazine again.

Vance Haynes,
 Amateur Radio Station W9JKZ,
 Marion, Kentucky.

(Your use of superlatives is a little dangerous as after all there can only be one best and one worst—the space between is filled up by better and worse. There is no need for us to name stories that we consider good. If you will run through the Discussion Letters you will see how our readers are affected by various stories, and of course, it is they that we are playing up to. We want to please them.—Editor.)

A Very Complimentary Letter from a Friendly Reader

Editor, AMAZING STORIES:

This letter for the most part is complimentary. Most of your stories are very, very excellent, but what has happened to Edgar Rice Burroughs. His, "Master Mind of Mars," and "Land that Time Forgot," were of the best. Of course, I know he has published many books, but surely he still writes?

In your, "Discussions," Spring-Summer Edition, 1933, Mr. Julius Schwartz mentions and expresses a wish for a Radio Broadcast. To your readers in general, I think a weekly or daily broadcast would be received quite joyously, aside from the advertising it would do. There is nothing like one of your stories, on the air, and I am sure nearly everyone would like them.

Also, in same "Discussions" as above, a Mr. Harley W. Jefferson, Jr., comments on your cover, paper, stories, in fact on everything. Just why he reads the Mag. at all is very puzzling. Your paper, to my way of thinking, is very easy on the eyes, that is, non-glaring, the cover is different, unusual, catches the eye, and the stories couldn't be better. They have an abundance of adventure in them, also teaching (even the "Elite") some basic topics unknown to them.

Of your illustrators, Morey, I think is by far the best, although I cannot explain why, as I am not an artist. He seems to put more life into his drawings.

This is my first attempt at correspondence with you and I hope this letter is published.

J. H. Alexander,
15 N. Fourth St.,
Phila., Penna.

(We print your letter realizing that you perhaps are complimenting us more than we deserve, so all we can say is that we appreciate your kind remarks and hope that you will continue to like our magazine. We trust that your first attempt at correspondence will be followed by others which we will be very happy to publish.—Editor.)

A Very Pleasant Letter from a Very Appreciative Reader

Editor, AMAZING STORIES:

I have read your magazine rather sporadically for five years and I enjoy it immensely. The February 1933 issue and the Spring-Summer semi-annual increased my regard for AMAZING STORIES. In the February I would rank the manuscripts as follows: First, "The Eternal Mask"

a highly interesting story concerning the moon and by the way, all stories about our satellite intrigue me. Second, "The Ho-Ming Gland." Third, "Souls Aspace," a clever short, short story. Fourth, "Borneo Devils," a story with a great deal more action than science. Fifth, the conclusion of "The Treasure of The Golden God," this story, although good, was not science-fiction except possibly for its containing an account of an ancient civilization.

In the Spring-Summer semi-annual I rated the stories as follows: First, "The Mother World," a very colorful story with a great sweep of imagination. Second, "Celestial Pioneers," a different story. I always like exploration narratives especially when the exploring is done on foreign planets. Third, "The Man from Tomorrow," this story is one of the most humorous I have ever read. Fourth, "The Valley of the Blind," an ingenious plot with science and action appropriately combined.

One of the finest features of AMAZING STORIES is the "Discussions" columns. One of the first things I read when I get the magazine is the "Discussions" corner, because I like to see what the opinions of other readers are. Wishing you the greatest of success, I remain,

George Baskin,
2909 Tenth avenue S.,
Minneapolis, Minnesota.

(Your letter is certainly encouraging to the staff of AMAZING STORIES. Your ranking of the stories is quite interesting; science has so wide a scope and covers so much ground that it is perfectly fair to consider the stories, which you speak of as deficient in science, as really embodying archaeology and anthropology, a quantity of science. "The Man From Tomorrow" we consider one of Mr. Coblenz's best efforts. This twentieth century of ours is open to a lot of criticism and as we laugh at the Victorian era, we seem to forget that the next generation may consider us just as foolish and in the light of the crimes of the day among which we would include the wars of nations, they will have every reason to consider us at once foolish and criminal. We are afraid we will be rather a sad object of contemplation. We always like to hear a good word said of the Discussions, which we have long considered a most valuable feature of our magazine.—Editor.)

Catalysts in the Sulphuric Acid Manufacture

Editor, AMAZING STORIES:

I was of course keeping close tabs on the "Discussions" columns subsequent to the publishing of "Radicalite," so I noticed with interest Mr. Walter X. Osborn's letter. In regard to his remarks about the use of a substitute for platinum as the catalytic agent in the contact manufacture of sulphuric acid, I would be interested to hear what other readers of "Radicalite" may have to say about it. I consulted a number of standard text books used in various institutions of learning in different parts of the country

in the preparation of the story, and I have as yet to find any that mention vanadium as a substitute. Among these texts was Smith-Kendall's "College Chemistry," which is used in undergraduate work at the Massachusetts Institute of Technology, and which is, I believe considered good authority. I quote from p. 342:

"The interaction of sulphur dioxide and oxygen is hastened by many substances, such as pumice, porcelain, ferric oxide, and, more especially, finely divided platinum, which remain themselves unchanged and simply act as contact or catalytic agents. The contact process, as this is called, is now very extensively used in the manufacture of sulphuric acid.—

"In practice the catalyst commonly employed is platinum, dispersed in a very finely-divided condition throughout a suitable carrying material, or base. The Grillo process uses as a base magnesium sulphate. This gives a catalytic mass just as active as platinized asbestos, and requires only one-hundredth the amount of platinum. With silica gel as a base the platinum content of the contact mass can be still further reduced. This is a very important point in the economics of the process."

Thus it would seem that the use of platinum is still an all-important detail in the manufacture of sulphuric acid, and, from the care which is taken to reduce the amount necessary, the best substance of all. My hypothetical compound, "radicalite," was supposed to be a substitute which was just as good, or better, than platinum. Whether or not vanadium is in common use I cannot say. It certainly doesn't seem to be used as frequently as platinum, and therefore, from an economic standpoint, cannot be as good. So much for Mr. Osborn's "important error of fact".

Richard Rush Murray,
Signal Section,
Panama General Depot,
Corozal, C. Z.

(The extracts you give from Smith-Kendall are very interesting and are a good example of what "Discussions" may bring out from interested authors. M. I. T., which we believe is the abbreviation for the college, is certainly the best place to get the latest information. But, the date of the story "Radicalite" is not specifically stated and you were perfectly justified in referring to platinum as a catalyst, and absolutely no objection could be made to that feature of the story. It is a gratification to feel that "Radicalite" was followed by so interesting a letter by its author.—Editor.)

A Correspondent Who Says the Editor Needs Peace

Editor, AMAZING STORIES:

Though I have read every number of AMAZING STORIES, I believe, since the founding of the magazine, as well as every number of the other two science fiction magazines, this is only the second time that I have summoned up the necessary energy to send my comments on the

same to the Editor—upon whom be peace. He needs it!

During the six years, more or less, that science fiction has been appearing regularly in magazine form, I have been frequently annoyed, frequently pleased, and occasionally delighted. Being a systematic soul, I shall take up the question of the annoyances first. First, I might suggest that before an author attempts to predict the future development of some science, he might take the trouble to acquire a fair working knowledge of the science as it exists to-day, and refrain as far as possible from making statements in flat contradiction to *present* knowledge. On present uncertainties, he can go as far as he likes! The story, "The Land of the Living Dead," is a case in point. It would have been immensely improved if the author had troubled himself to look up the properties of radium before he wrote about them. Any freshman chemistry test would have served to enlighten him on the point that it is not the chemical properties of radium that are remarkable—they are quite similar to those of barium, a most commonplace element—but the physical properties of the same, which are not at all commonplace. And if the author is going to inflict upon us rays that make the body transparent, please persuade him to invent a new element whose radiation has that most remarkable property. For the radiation from radium, which, by the way, is quite well known, has no such property. Other stories might be mentioned that would reinforce my point, but that would be superfluous.

But that's about enough brickbats for the present. The typewriter is beginning to smoke now, and I might burn its bearings if I kept this up.

Allow me to congratulate you on your new covers. They are an immense improvement over the old ones, and are much better, in fact, than the typography that they enclose. A ten point Gothic type would be much more appropriate to the contents of the magazine, but I'm afraid that such things cost money. The advertisements are unfortunately not at all up to the level of the editorial contents, and resemble those in the cheaper pulp magazines to an unpleasant extent. But sometimes they are amusing. A cure for the whiskey habit on one page, and parts for a home grown still on the next!

Your illustrations have improved recently, to a most laudable extent. Morey is, I think, an excellent illustrator for the type of story involved. His human beings look human, and his monsters plenty monstrous. The best thing that he has done yet I consider the illustration in the March issue for "The Flame Worms of Yokku." It resembles some of the work of the illustrator—I've forgotten his name—of the first edition on Conan Doyle's "The Lost World." An orchid to Mr. Morey!

The stories are on the average considerably better than those in the other SF magazines. Verrill is excellent in his own line, and Murray Leinster—though he sometimes writes for other magazines—is the only man among your writers who can make the details of a future war

sound plausible. His "Politics" was excellent. Your stars, though, are Campbell and Dr. Smith. Their characters talk like human beings and the plots are excellent. But above all praise was the villain of the Skylark stories. I was tremendously disappointed when he was annihilated. He was good for three or four more stories! But in "Beyond the End of Space," Dr. Atkll shows promise. Please, Mr. Campbell, don't bump him off for three or four stories yet! Any darned fool will do for a hero, but a good villain is rare!

I have one request to make. Please stay away from time-travelling stories as much as possible. Hibernation and waking up ten million years from now is all right if you like sleeping that long, but kindly don't turn around and meet yourself coming back. There is a limit, you know. There is no object now in going into all the objections against the plausibility of space travelling—that has been done quite competently many, many times before—but those arguments are sound. A story must be consistent, above all things, and when you meet your ninth great grandfather or even yourself, there just isn't any consistency left. And time is a one way stream anyway—so says the second law of Thermodynamics and the laws of entropy. And if there is one thing sure in this universe it is the law of the increase of entropy. As witness this letter—by now it has lost any order that it may once have had!

John D. Clark,
Dept. of Physical Chemistry,
Stanford University,
Palo Alto, California.

(Presumably, we all need peace, but you need not trouble about the Editor of AMAZING STORIES—he is happy. He likes particularly such letters as yours. You will not find that our authors adhere to science as it exists today. Present knowledge is not far from present uncertainty. As late as 1869 Columbia College, as it was then called, was divided between the old and new systems of chemistry. In the qualitative laboratory, water was written as HO, sulphuric acid as HO, SO₃, and so on and the adherents of the old were very fixed in their idea that the old was the right thing. It is not too much to say that every few months we are told of something new in the theory of atom and molecule, so we feel that our authors are justified in going ahead of the procession. Everybody knows that there is no way of imposing invisibility on man, but invisibility figures very well in our stories. We are changing to ten point type in our April issue for stories, with eight point eventually for Discussions.—EDITOR.)

Improvements in AMAZING STORIES
Noted—A Letter of Kindly Criticism
Editor, AMAZING STORIES:

I wish once more to congratulate AMAZING STORIES for its very marked improvement, which steadily continues to show itself. On the other hand, I have a few criticisms to make about AMAZING

STORIES and science-fiction in general.

I really think that A. S. should return to the old type of cover, depicting a scene from one of the stories. For one thing, I believe that Morey is a far better artist than this A. Sigmund, whose drawings look like the products of a distorted mind. Also, I do not see what a drawing showing a devil or some other creature would have to do with science-fiction. The January cover was quite well-done, but the February and March covers are positively eye-sores. However, I have liked almost all of Morey's covers. I believe Paul is also very good.

Now for another criticism. I wish you would discontinue that policy of printing very short stories, most of which seem to only fill up space. I believe a few longer, well-written stories would be much more interesting than some short stories, which as a rule are not science-fiction at all. I also think you should refuse to print weird stories such as "The Last Earl," which was interesting but did not belong in AMAZING STORIES. A. S. errs most of all by printing such trash as "The Doubt" and "Delilah."

Now I wish to compliment A. S. for retaining its old size and shape, rather than reducing those features, so it could sell at a cheaper price. Another magazine has reduced its price to 15¢ and has also cut its size, until it reminds me of a little pamphlet or a humor magazine. Do not reduce AMAZING STORIES, but keep it up to its standard, as the aristocrat of science-fiction.

Also, keep up the quality of the stories, especially since one other science fiction magazine has been discontinued. The last three issues of A. S. have been excellent except for Mr. Campbell's serial which started in the March number. That story, like most of Campbell's is crammed with too much complicated science.

Before signing off, I wish to advance one more criticism. I believe you should not publish any more letters from Dr. Smith or Miss Robb concerning that foolish argument over slang. They take up much unnecessary space in the "Discussions." Besides, what difference does it make to us whether the people of the future use our slang or not. That would not affect the story in any way. Miss Robb does not know what to criticise in a story, and Dr. Smith only is wasting his time answering her letters.

Bill Bailey,
1404 Wightman St.,
Pittsburgh, Pa.

(We are satisfied that the Robb-Smith controversy about slang is over. We thought it was quite amusing while it lasted. We have no idea of reducing the size of AMAZING STORIES and I think that you will be pleased with our larger type. We think that the larger type, especially in the Discussions will make the reading much more agreeable. If you will look at the names of authors who figure in our recent issues, you will see that we are getting the best. In looking ahead, we feel that we have excellent literature in prospect. We know that we have a large quantity to choose from as we are overstocked.—EDITOR.)

**A Complaint About Recent
AMAZING STORIES**

Editor, AMAZING STORIES:

I have been a reader of AMAZING STORIES for many years, practically since its inception. I have seen authors come and go and have read many stories good, bad and indifferent, and so I think that I am qualified to express my opinion of the magazine. On reading the Discussions columns of the first number of the new year I was a little surprised to note the large amount of favorable criticism and the comparative absence of brickbats, except in the cases of one or two individual stories.

I was surprised because, in my opinion and the opinion of all my friends who read AMAZING STORIES, or have read them in the past, the general quality of the stories has definitely lowered. Except in the cases of a few of your authors such as Dr. Keller, Dr. Breuer, Hart Vincent, etc., most of whom wrote for AMAZING STORIES in the beginning, the men who write the stories to-day are not half as clever, interesting and fine writers as those of the old days. Where are such stories to-day to compete with the "Moon Pool," "Sunken World," "Second Deluge," "Green Girl," "When the Sleeper Awakes" and hosts of others too numerous to mention. A story as puerile, ridiculous and badly written as "The Last Earl" which you included in the January number could never have appeared in the magazine a few years ago. It is only occasionally now that we get such stories as the "Metal Doom," which is the best story you have published in over two years.

Possibly the reason for this degeneration is lack of material. In that case go out after those old-time writers and get them to write stories for you. I personally know many people who have stopped buying A. S. since it began to publish these inferior stories we are now getting. Get out of that smug self-satisfied rut that you are in and bring back AMAZING STORIES to its old standard when every story was a fresh and delightful and absorbing surprise.

Robert Turner,
836 Riverside Drive,
New York City, N. Y.

(If you will run through the Discussions, you will find a number of letters that are in absolute contradiction to the present one. While some criticize unfavorably as you do, the majority of correspondents say that we are improving. It is interesting to note that the reader or Editors often picks out flaws which are not mentioned by the critics. However, we publish your letter to let people see how our work affects at least one reader, but we can assure you that the reason for "this degeneration" is not lack of material because we are overstocked with stories.—Editor.)

Our Ideas of English Conversation Are Pronounced Inaccurate by a Native of the Island

Editor, AMAZING STORIES:

Re your comment on Albert Trube's

letter in the October, 1932, issue. Please do not think that all Englishmen speak the "Bally fine day," "old thing," "but beastly weather," "what?" style of English. This exists, not entirely, I admit, but chiefly in novel characters of the Gussy type. Not one Englishmen in a hundred talks like this actually. Still, I suppose your ideas of England are no more weird than our visions of hails of lead sweeping Chicago streets daily or the idea that an American always wears a straw hat and horn-rimmed glasses.

As far as covers, stories, etc., are concerned I think they are tophole, old thing, what?—ahem—I mean they are the bees knees, so, but please don't publish any reprints. The only reprint I should enjoy seeing would be "The Skylark of Space" and "Skylark Three" in book form. (Sorry I must mention this as well as every other letter-writer, but you see Ed., that story was a wow and if I don't see it again soon, may you be kicked to death by little red spiders!) I should welcome correspondence from readers of A. S.

AMAZING STORIES, I tender you belated but nevertheless sincere New Year Greetings and best wishes for 1933.

R. K. Norris,
42 Wimbledon Road,
Sherwood, Nottingham,
England.

(We hope that you will receive correspondence from our readers. There are numbers of them who desire correspondence. It is most pleasant to get letters from England. We do not know what you mean by "bees knees, so" or whatever it is.—Editor.)

Criticism on Our Artists and on the Cover

Editor, AMAZING STORIES:

I just received the February issue. It's not bad. However, the cover is pretty punk and the inside illustrations are not good by a long shot. I have received a diploma for three years work in the Public Industrial Art School, I have been awarded the first prize for art in the boys Hobby Fair in Philadelphia and am now a pupil at the Graphic Sketch Club so I know something about art. I compared the February, 1933, cover with the May, 1932, cover and I compared that with the October, 1931, cover and found the covers have been falling in their art, scientific apparatus, etc. What you need is Wesso, Muller and a score of other old babies. They were the fellows who used to make this a good magazine. Leonard and Lane did some marvelous drawings for other science fiction magazines. Why not use them? Morey is good, but not as good as Wesso. I could paint better covers than Morey myself, but Wesso is excellent, but whatever you do, don't get Paul back. Morey is a kingdom-come to him. Morey used to make very nice covers. For example, take the October, 1931, issue. That cover was a wow, and the old authors such as Merritt, Lovecroft, Smith, Williamson, Neil R. Jones, Meek, etc., are very seldom heard from anymore. John W. Camp-

bell is your greatest technical writer although his stories are not so lifelike as old Doc Smith's. If there is any reader who has the November, 1931, issue (with cover) or the January, 1932, issue (with cover) or the February, 1933, issue (without cover) or the issue containing "Anachronism" by Charles Cloukey, I should like to buy them. I should also like to see reprints of "Spacehounds of I. P. C.," "Skylark of Space," and "Skylark Three."

William Dressler,
1425 North Fifteenth Street,
Philadelphia, Pa.

(The amusing thing in this letter is that you express yourself as not approving of Paul while so many like him. We consider Morey fully his equal. As regards authors you will find that stories by the old favorites are frequently to be seen between our covers. Sometimes we feel that it would be easier to use nothing but the old, well-known authors, but the easiest path is not always the best one—that is to say, it does not always lead to the highest point. It is astonishing how our old authors stick to us. You will find the names of old friends continually appearing on our pages. You certainly will hear from our old authors if you look for them. We hope that your statement of wants brings results.—Editor.)

A Critical Reader Discusses Our Authors' Efforts and the Cover Illustration

Editor, AMAZING STORIES:

The seventh year of AMAZING STORIES is over—and like all events, when it has already faded into the past it is easier for us to look back and see exactly, and to criticize more wisely, the decisions made during the year.

First of all the cover illustrations. Mr. Morey improved with every cover. His two best pieces were the ones of "Thia of the Drylands" and "Beyond the Planets." I can imagine that the latter took some time to complete, but the blending of the colors is expertly and adroitly managed. AMAZING STORIES, the pioneer, as usual, gave science fiction a new type of cover; one that satisfactorily and perfectly represents what is to be found within its covers. Sigmund is quite good, especially so for his cover on the March issue. However, I'm afraid that he'll soon run out of original ideas, so, for variety, I suggest that you alter your present cover policy so as to allow Morey to do the cover every other month. Morey has likewise made rapid strides with his interior illustrations so that they are now real gems of the first water. I'm also glad to see that he is developing a style of his own; one that can be readily recognized as a "Moreyan" sketch.

Now for the most important feature and life of the magazine—the stories. You have published some good science fiction—and some poor science fiction. I have carefully gone over each issue of the seventh volume again, and by my own system of marking and evaluation have concluded that the following are the best stories: "Seven Sunstrokes," by Bob Olsen, "The Metal Doom," by Dr. Keller, "A Matter of Nerves," by William

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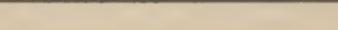
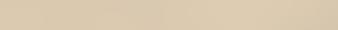
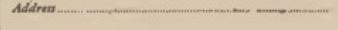
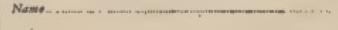
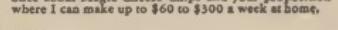
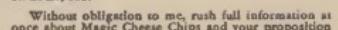
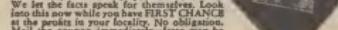
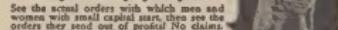
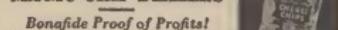
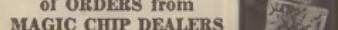
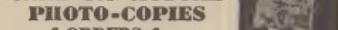
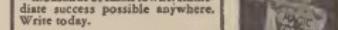
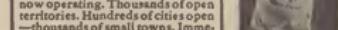
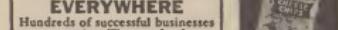
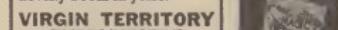
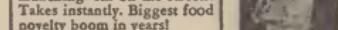
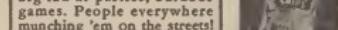
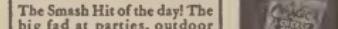
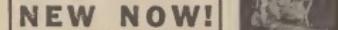
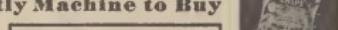
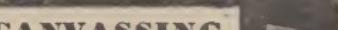
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